TEXTILE WORLD

A McGraw-Hill Publication ---------- JULY • 1947

New Lees Mill . . . PAGE 109

New Dye Technique Shows MATURITY OF COTTON

PAGE 105

R v.372 July-Dec. 1947

Efficient, uniform drying in moderate capacities

PROCTOR TRUCK DRYER
for Cakes or Skeins

Accepted for years as a highly efficient dryer for rayon skeins, the Proctor truck dryer has been adapted recently for drying processed rayon *cakes*. It is especially applicable for capacities ranging from 400 to 2,000 pounds of cakes or skeins per day. With these dryers in operation, it is possible for the throwing mill to dry cakes and skeins interchangeably in the same machine—or in larger machines with two or more trucks—at the same time, for there is a difference in the way in which trucks must be loaded for each. Skeins or cakes are hung on poles which rest on supports along the sides of the dryer, as can be seen from the photograph. Poles are spaced across the length of the trucks when the truck is being used for cakes. When it is to be used for skeins, intermediate pole supports are not used, and the top and middle supports are reversed, providing a different spacing for skeins. Each dryer accommodates one truck at a time and may be provided with doors at one end or both ends, depending upon individual requirements. The machine has a proven record for uniformity of drying, high efficiency steam consumption and low power requirements. It is proving to be the answer to the need of the throwing mill with a moderate output of either skeins or cakes. You'll find it well worth your while to investigate the details of this modern Proctor equipment. Write today.

PROCTOR & SCHWARTZ, INC.
PHILADELPHIA 20, PA.

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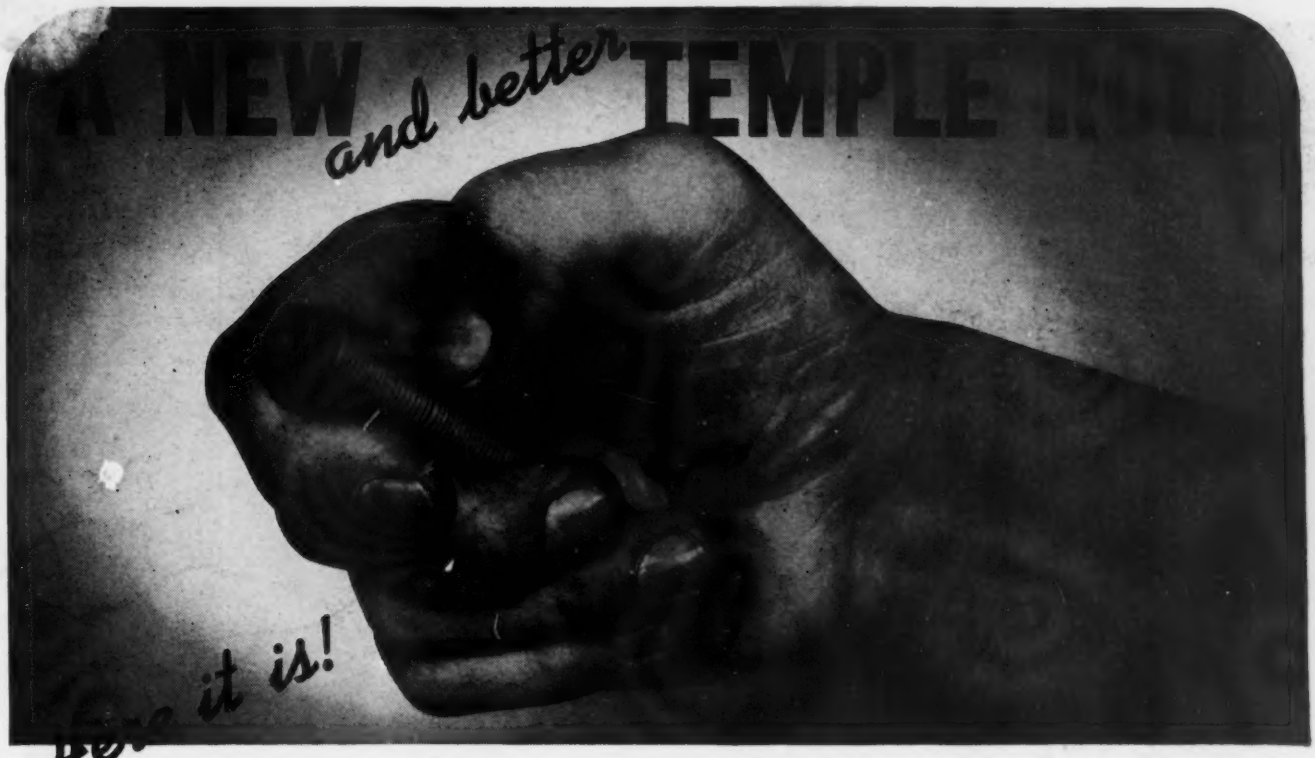
Subscriptions: United States and possessions, $2.00 a year, $3.00 for two years, $4.00 for three years. Canada, $3.00 for one year, $5.00 for two years, $6.00 for three years. Latin American countries, $5.00 for one year, $8.00 for two years, $10.00 for three years. All other countries $15.00 for one year, $25.00 for two years, $30.00 for three years. Please indicate position and company connection on all subscription orders. Entered as second class matter August 25, 1936, at Post Office, Albany, N. Y., under the act of March 3, 1879. Printed in U.S.A. Thirty-five cents per copy.



This is the roll you have been looking for.

Mill tests prove this new roll to be superior to the regular grooved rolls in handling many of the finer and more delicate fabrics. It has proved to be particularly helpful in weaving Nylon Marquisettes, French Crepes and similar weaves.

It holds cloth like an automobile tire holds the road—no side slip.

Test it on your desk, or any other smooth surface—the smoother the better. Press upon it very lightly and try to move it lengthwise to the right or to the left. YOU CAN'T MOVE IT.

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These rolls hold better, last longer and do the job at less cost.

Order a trial lot today.

* Exclusive feature. Patent Pending.

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Ask for Accotex—Style No. 1277.
Send your orders to Dept. A for quick handling.

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D

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Published monthly. United States and Possessions, $2.00 a year, $3.00 for two years, $4.00 for three years. Canada, $3.00 for one year, $5.00 for two years, $6.00 for three years. Latin American countries, $5.00 for one year, $8.00 for two years, $10.00 for three years. All other countries, $15.00 for one year, $25.00 for two years, $30.00 for three years. Single copy, 35c. Please indicate position and company connection on all subscription orders. Annual Index available from TEXTILE WORLD.

McGRAW-HILL PUBLISHING CO., INC. Publication Office, 99 N. Broadway, Albany 1, N. Y. Editorial and Executive Offices, 330 W. 42nd Street, New York 18, N. Y.—JAMES H. McGRAW, *Founder and Honorary Chairman;* JAMES H. McGRAW, JR., *President;* CURTIS W. McGRAW, *Senior Vice President and Treasurer;* HENRY G. LORD, *Vice President;* JOSEPH A. GERARDI, *Secretary;* NELSON BOND, *Director of Advertising;* EUGENE DUFFIELD, *Editorial Assistant to the President;* J. E. BLACKBURN, JR., *Director of Circulation.*

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Of this issue 23,150 copies were printed

Member of Audit Bureau of Circulations
Member of Associated Business Papers, Inc.

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THE *Long-Range* VIEW

JOB LOADS

We frequently are asked what should be job loads for various textile operations: How many looms a weaver should run; how many spindles should be assigned a spinner; how many pounds a winder should produce?

Many times, we know, men from one mill attempt to find out the job loads assigned in other mills, usually competitive. Occasionally when they do find out, they either feel proud that their loads are greater or, if less, feel that the information is incorrect or incomplete. In all cases you can be sure the information is incomplete.

Job loads mean very little unless information is complete. It doesn't mean a thing to learn that, at X mill, winder operators produce 300 lb. per 8 hr. unless qualified by such information as the size of the supply package, the take-up package used, amount of yarn cleaning, total breaks, incidental duties required. Among incidental duties can be the following: obtaining supply packages, delivering work, tying off, making out tickets, cleaning machines, adjusting equipment, repairing bad work, teaching new employees, even sweeping.

But there is one advantage in learning that operators in another mill are producing more than they are in yours—you may find some new ways to increase production of the operators in your mill. You may investigate and learn the advantages of package-to-package operations, of larger packages, of assigning all jobs not requiring skill to unskilled help, of having operators specialize, of incentive systems, of breaking up unnecessary monotony.

To ascertain job loads intelligently, there is only one method: Make a job study and a methods analysis followed by stopwatch timing. Such a procedure cannot be a one-time proposition, but must be continuing and must result in a written record of what comprises a job and what should be the time required to perform the various elements. In any progressive textile mill, job loads can be assumed to change at least once a year, often twice, frequently more. Any plant change, such as installation of new machinery, should automatically call for a review of all jobs affected directly or indirectly.

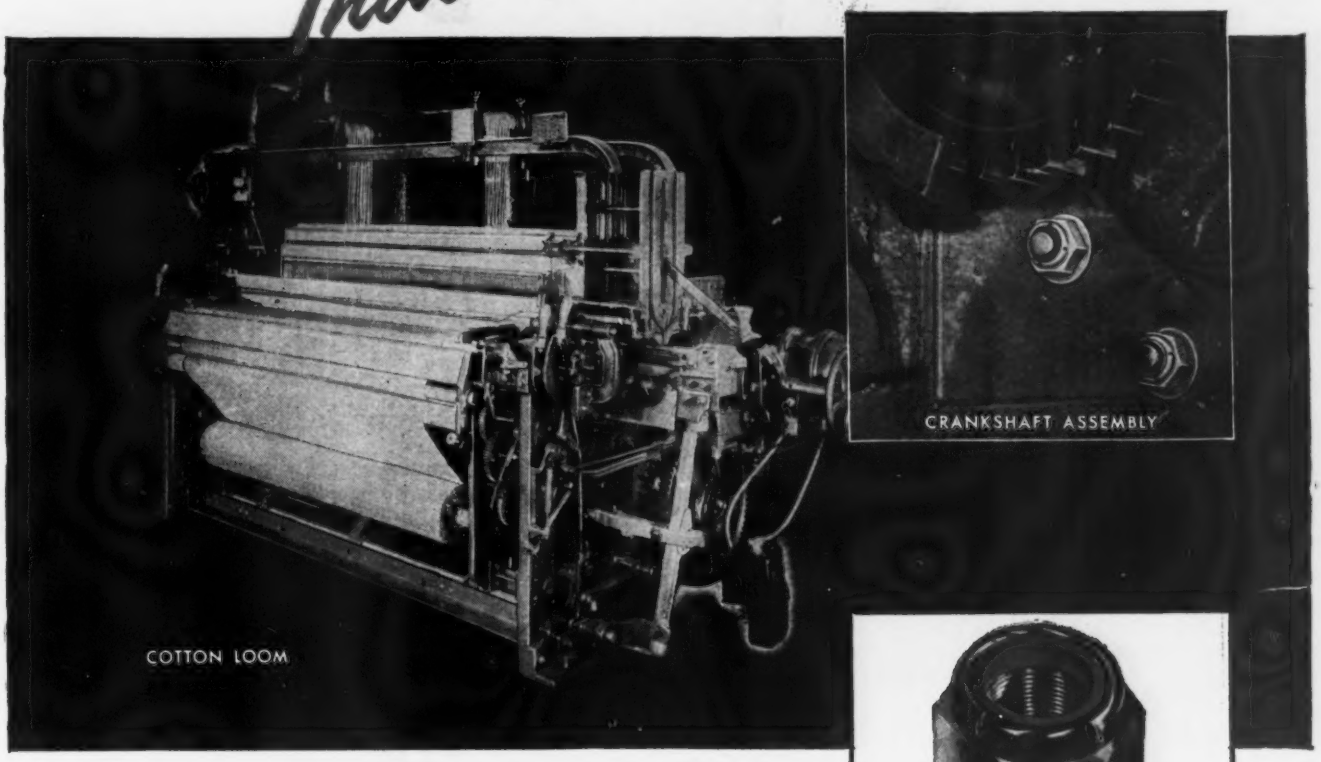
Whenever piece rates are kept constant, one must assume that duties change. In fact, it is an old trick to change the duties of operators whose earnings get out of line. Instead of studying what is causing operators to produce more or less than preconceived amounts, incidental duties are added or taken away. Employees soon learn the futility of working harder, of taking advantage of eliminating unnecessary work, of short cuts; and everyone loses.

Progressive mills should have an understanding with their employees as to (1) just what constitutes their jobs —preferably in writing, as in a manual—and (2) that their rate or duties will be maintained until something should change the duties. In fact, on occasions, operators are guaranteed at least part of the benefits of any sound economies they effect; sometimes they are given all of the saving (the mill gets its benefits in the latter case from higher production against its fixed charges).

If you and the persons under your supervision do not know what is a fair job load, don't expect to get it from your competitors or even from other mills in your group unless, at the same time, you get all the facts about the job and you are satisfied that they are correct. You can, at best, be only second rate if you depend on following someone else instead of going ahead on your own—after getting the facts.

C. H. Bendigo

SELF-LOCKING *Protects Inaccessible Parts* **AGAINST LOOSENING AND BREAKING**



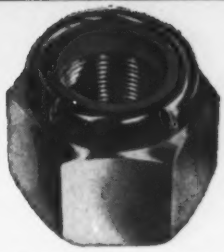
The Red Elastic Collar protects prestressed or positioned settings against VIBRATION!

What happens when the inaccessible fasteners on the crankshaft assembly are loosened by the endless vibration built up by the distinct shock of the drive gears at pick and beat up? Mechanically, prestressed and positioned settings are changed, spilt-second, synchronized timing is upset, and loose parts wear beyond repair. This means costly repairs and unnecessary down time.

Production-wise, it means that uneven power delivery is causing such cloth defects as overshots, broken ends, pull-ins and mispicks.

Here's a suggestion to loom fixers. When repairs or adjustments make it necessary to remove an ordinary fastener, replace it with an ESNA Elastic Stop Nut. They're immediately available from stock.

ESNA Elastic Stop Nuts—with the self-locking, self-sealing and re-usable Red Elastic Collar—are easily adjusted or removed. They provide dependable protection against Vibration, Thread Corrosion, Thread Failure, and Liquid Seepage. ESNA engineers are now ready to study your fastener problems. Address: Elastic Stop Nut Corp. of America, Union, N. J. Sales Engineers and Distributors are conveniently located in many principal cities.



LOOK FOR THE RED COLLAR

THE SYMBOL OF SECURITY

It is threadless and dependably elastic. Every bolt—*regardless of commercial tolerances*—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads—and eliminates all axial play between the bolt and nut.

All ESNA Elastic Stop Nuts—*regardless of size or type*—lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

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AIDS PRODUCTION!

High standards of plant housekeeping contribute to high worker productivity. So it is important to keep floors clean . . . and for still other reasons. Clean floors aid safety underfoot and reduce fire hazards.

It is important, also, to reduce floor-cleaning costs wherever possible. And it *is* possible, in many textile mills and factories, through the use of mechanical equipment that both scrubs and picks up. Even congested areas and narrow aisles can be cleaned in this manner with the compact *Finnell Scrubber-Vacuum* shown above. This is a complete cleaning unit *all in one.* It applies the cleaning solution (or scouring powder), scrubs, rinses if required, and picks up. Has a cleaning capacity of approximately 3,750 sq. ft. per hour. For use on larger, open-area floors, *Finnell* offers a *Self-Propelled Scrubber-Vacuum* that has a cleaning capacity up to 8,750 sq. ft. per hour!

Finnell makes floor-maintenance machines for every type of floor care—wet scrubbing, dry scrubbing, dry cleaning, waxing, and polishing. Also a full line of *Cleansers, Sealers,* and *Waxes,* as well as *Steel-Wool Pads, Mop Trucks,* and other accessory equipment.

For free floor survey, consultation, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1907 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

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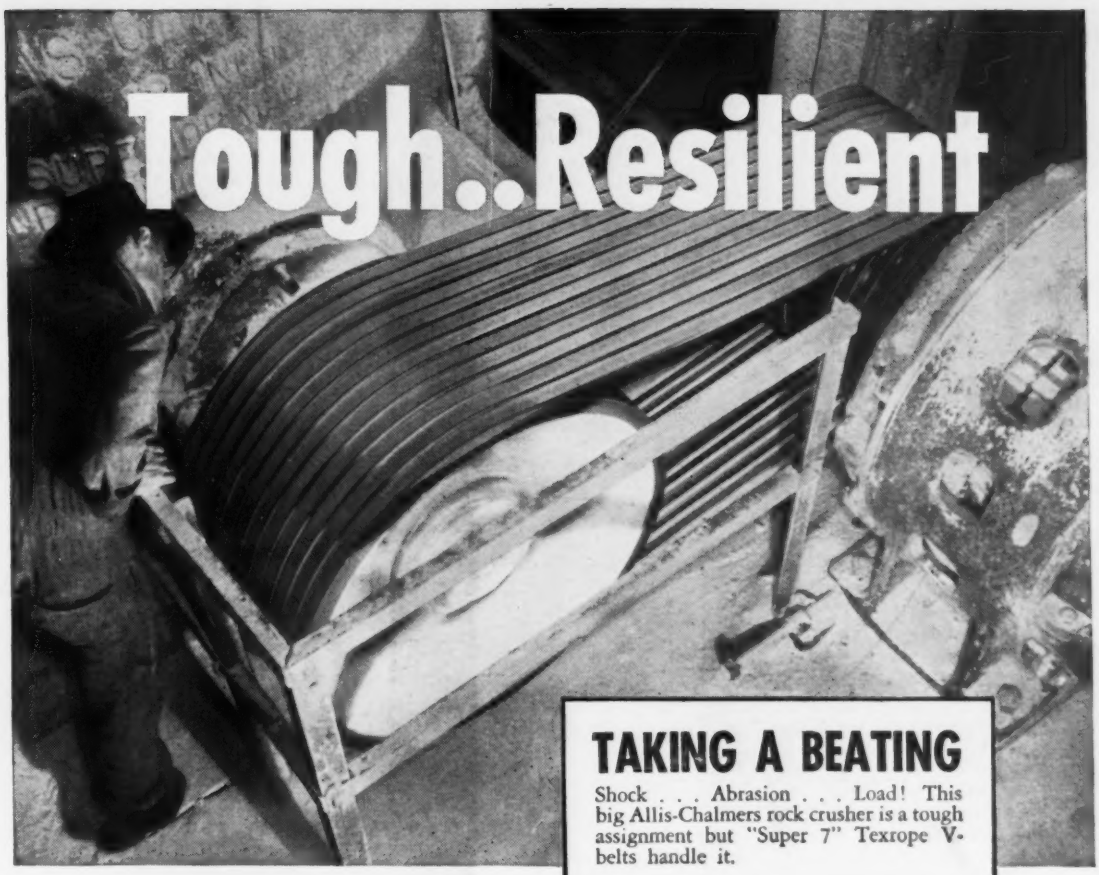

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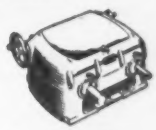

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Speed variations up to 375% at the turn of a crank.

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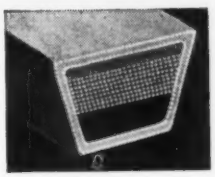

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2. SHOCK ABSORBING. "Super 7" belts combine great strength with the degree of resiliency necessary for long life and smooth power transmission.

3. HEAT RESISTING. *All* "Super 7" V-belts are designed and built to give high resistance to heat.

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"Super 7" Texrope V-belts come in five types to meet every operating requirement: *Standard — Heat Resisting — Oil Resisting — Oil Proof* and *Static Resisting*. Call your Allis-Chalmers office or dealer. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

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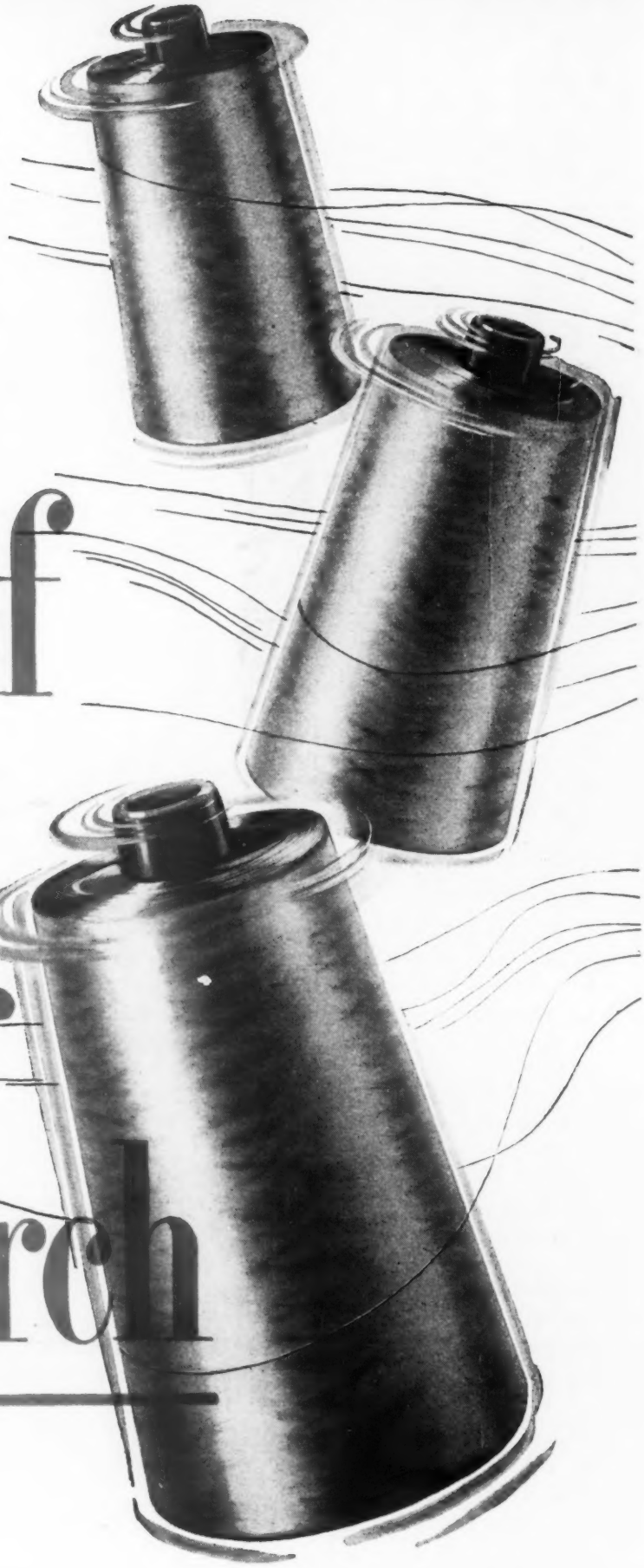

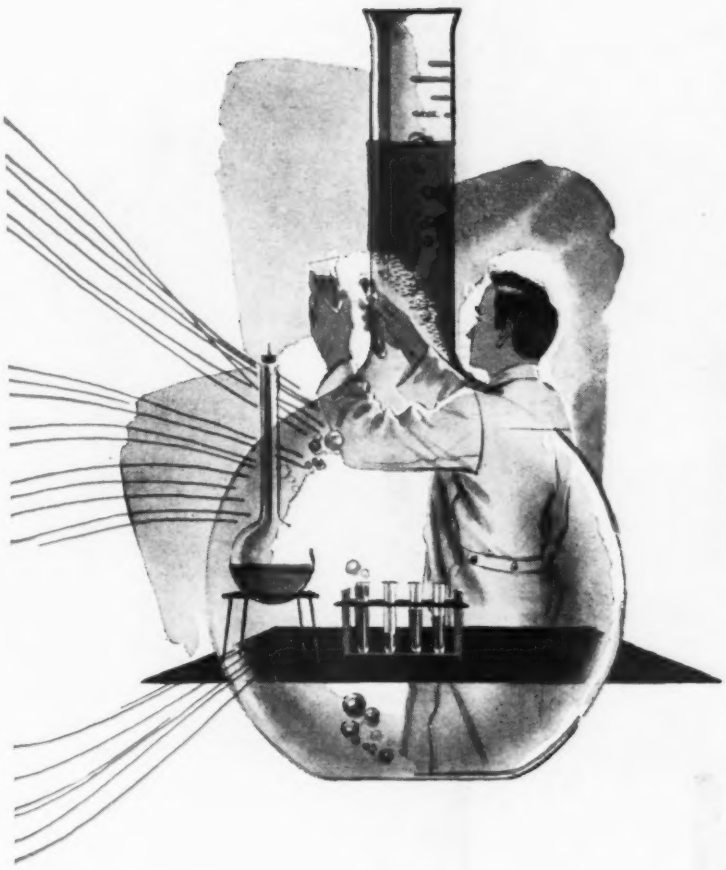

BACK of every inch of textile fiber that leaves a Du Pont plant is a beehive of research.

There is specific research in fibers—and it comes as a great surprise to a lot of people to know that as many as 800 Du Pont men and women are engaged in direct research on textile fibers.

But even that is just the beginning.

For thousands upon thousands of other men and women of Du Pont are working every day in chemical and engineering research. Here a man at work in organic chemistry may make a discovery that tomorrow will serve directly to improve the quality of a Du Pont textile fiber. There a man working in plastics may come across something that will be the fiber news of the future.

What other manufacturer in the textile field has access to this wealth of research in chemistry? Not only in Du Pont plants but in many a famous university there are scientists at work today laying the foundations for tomorrow's better things for better living.

When you are faced with a basic problem in the use of a textile fiber, when you are making a decision on what fiber to select—there are practical advantages to you in the extent and the quality of Du Pont research.

For NYLON
For RAYON
For FIBERS to come...look to Du Pont

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

DU PONT
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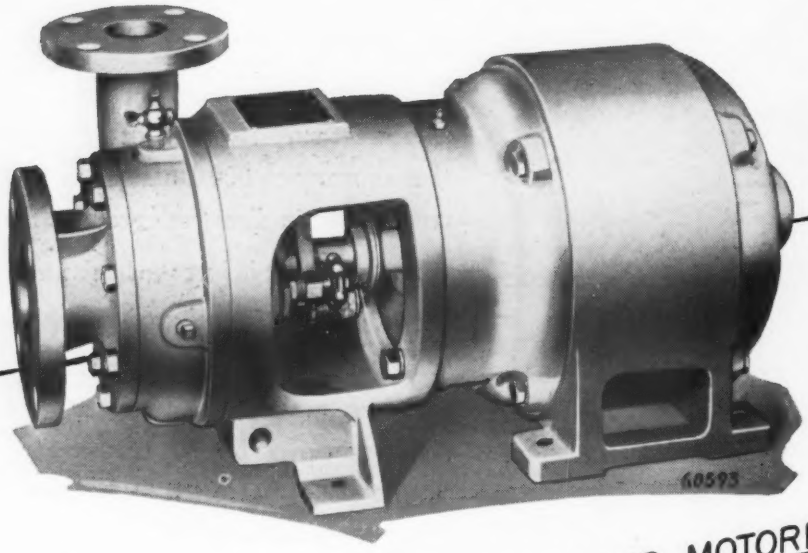
Applying for the *Job*



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9-997

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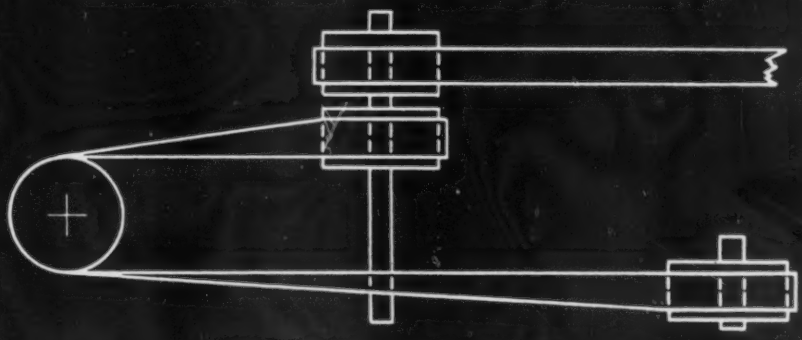
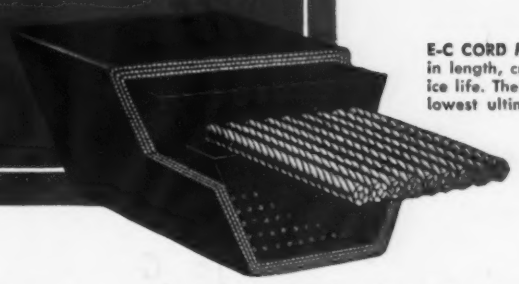
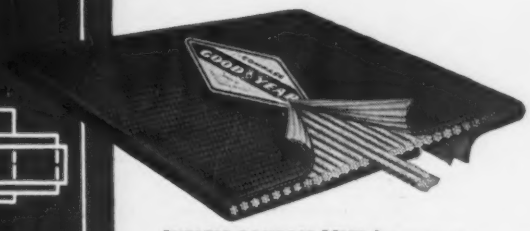


MILL-PROVED MONEY SAVERS



Long, Trouble-Free Service with these Goodyear Dependables



ENDLESS COMPASS BELTS for compressors, vertical openers and other heavy-duty drives. In countless installations they have outlived and outperformed ordinary belts three and four to one.

TEXAIR HOSE, most economical ever built for mill clean-up. Light, supple, but unusually strong. Won't soften or weaken through contact with oil. Lasts many times longer than best previous clean-up hose.

E-C CORD MULTI-V-BELTS are uniform in length, cross section, pull and service life. Their perfect teamwork insures lowest ultimate cost.

HERE are three of a long list of Goodyear products that have won a notable reputation in textile mills. With them you get the economy, the dependability, the long-lived service that have made Goodyear first choice of mill owners for years.

And more — you get the expert counsel of the G.T.M. — Goodyear Technical Man. His on-the-spot specification gives you these superior products in the exact size and construction your problem requires. For more detailed information, why not consult the G.T.M.? Write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

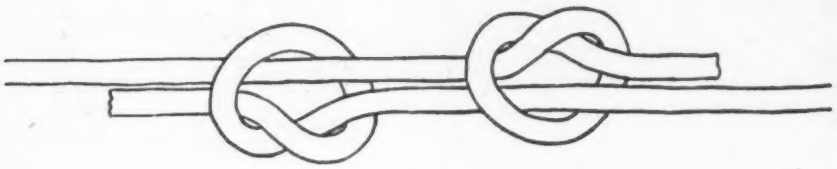
FOR HOSE, BELTING, MOLDED GOODS, PACKING, TANK LINING built to the world's highest standard of quality, phone your nearest Goodyear Industrial Rubber Products Distributor.

Compass, Texair, E-C Cord—T.M.'s The Goodyear Tire & Rubber Company

GOODYEAR

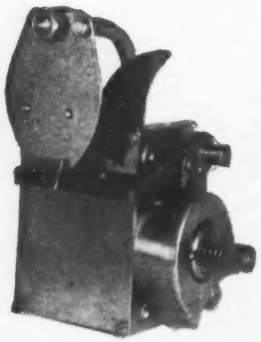
THE GREATEST NAME IN RUBBER

DO YOUR KNOTS SLIP?

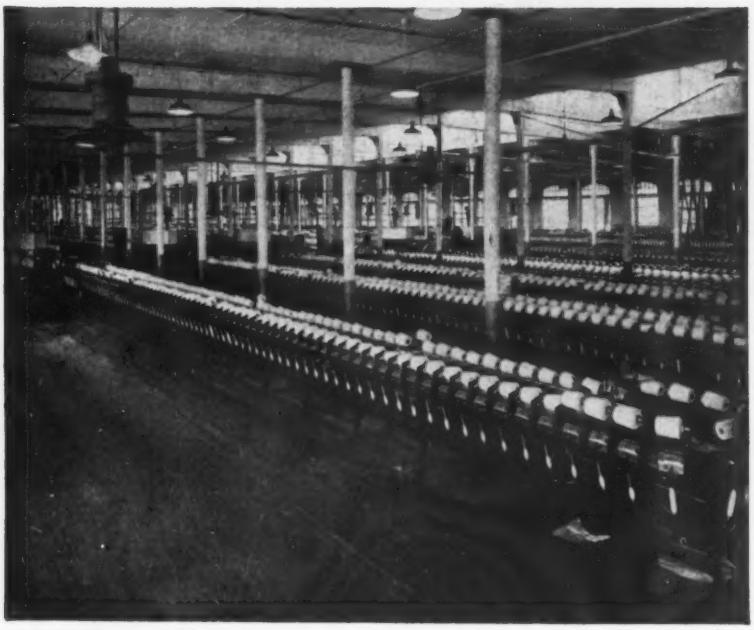


USE THE FISHERMAN'S KNOT

TWO SINGLE KNOTS PULLED UP AGAINST EACH OTHER



The knot tier is a small precision made unit that can be replaced by a spare knotter in two minutes



All of our Traveling Spindle Winders tie this small, smooth, non-slipping Fisherman's knot

ABBOTT MACHINE COMPANY

WILTON, N. H.

LOWER manufacturing costs are very definitely a function of New Departure ball bearings.

The ball bearing is a "natural" for the higher speeds, greater rigidity and improved quality of product so demanded by today's exacting production standards.

An investment in machines of modern ball bearing design is an investment in faster production — *lower costs!*

New Departure's technical literature is most helpful. Tell us your needs.

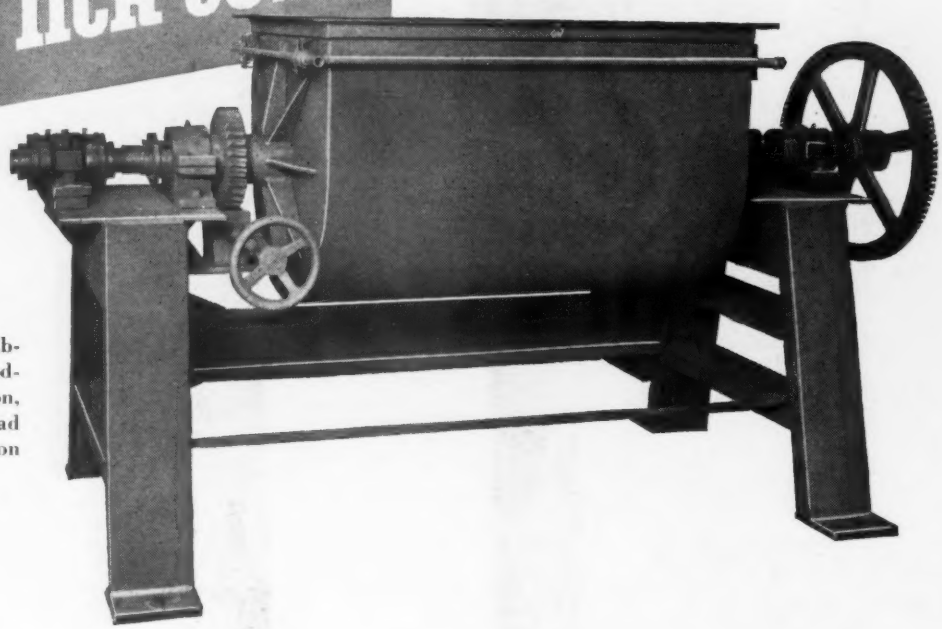
NEW DEPARTURE
BALL BEARINGS

2481

NEW DEPARTURE • Division of GENERAL MOTORS • Bristol, Conn. • DETROIT, CHICAGO, LOS ANGELES and other Principal Cities

STAINLESS to lick corrosion

CLAD to lick cost



This ribbon blender was fabricated by Artisan Metal Products Company, of Boston, Mass., of a Lukens Clad Steel to prevent corrosion from textile chemicals.

You win both ways—gain protection and economy—when your textile machinery and equipment are made with Lukens Stainless-*Clad* Steels.

Our stainless cladding is as durable and corrosion-resistant as solid stainless itself. But savings in material costs are as much as 50 per cent!

Any specification you want. Most of our customers buy Stainless-Clad Steels with cladding of 10 or 20 per cent of total plate thickness. But other percentages from 5 to 50 are equally available. The stainless may be of any standard type. It is permanently bonded in a *uniform thickness* to any required quality of carbon or low alloy steel.

. . . and wide, for lowest-cost fabrication. On many jobs, you can save time and cut fabrication costs as much as 7 cents per pound of plate weight by using a single wide plate instead of narrow widths. We make Stainless-Clad Steels in plates *up to 178″ wide*, or from 3/16″ to over 3″ thick. You can get heads in all styles and sizes to over 18′ in diameter.

Further information on Lukens Stainless-Clad Steels is contained in Bulletin 338; on Lukens Nickel-Clad, Inconel-Clad and Monel-Clad Steels, in Bulletin 255. Please write for copies. Lukens Steel Company, 406 Lukens Building, Coatesville, Penna.

CLAD METAL STEEL

LUKENS

Nickel-Clad Stainless-Clad
Inconel-Clad Monel-Clad
STEELS

SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY

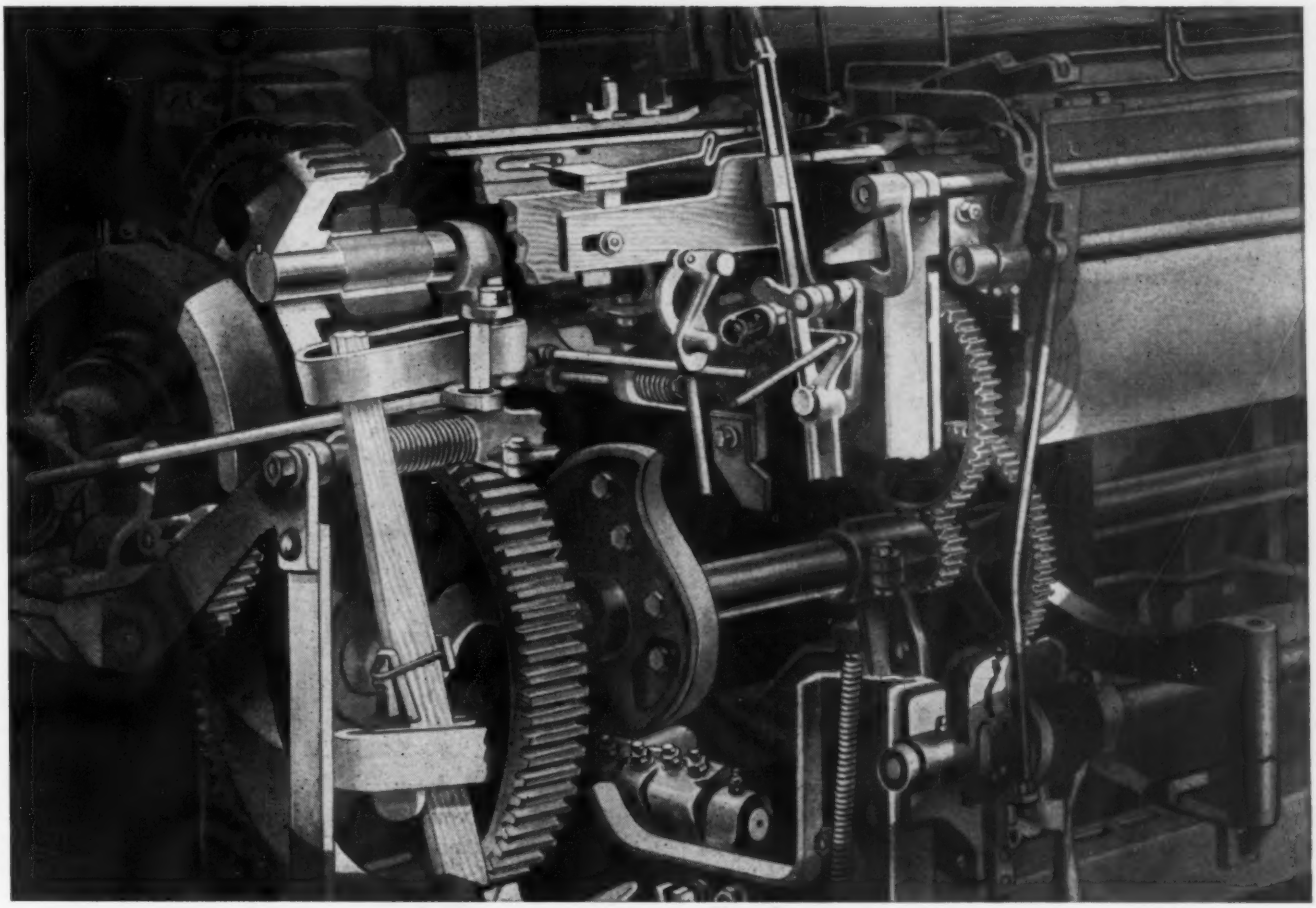
Inside Knowledge on Lubrication Problems

—SHOCK LOADS—

This is One of a Series of Messages on Common Problems in Your Mills

Torture Rack

FOR OIL AND GREASE!



THAT'S WHAT YOU might call your loom . . . a torture rack for oil and grease. For here, more than any other spot in your mills, oil and grease really take a beating.

On those cam, crankshaft and pick bearings, for instance, you get continued shock loads that seek to smash your lubricant out, cause metal-to-metal contact and wear. You also get contamination from flying bits of lint.

Gargoyle Vactra Oils and Gargoyle AA Greases are solving this problem in many mills. These special shock-load lubricants cling tightly to the metal, resist rupture, reduce wear to a minimum.

★ ★ ★

High-quality Mobilgreases perform the same job on gears, pick cams and pick balls, resist the constant pounding and the wiping, sliding action. Your looms stay on the job more continuously to produce more cloth at lower costs.

GARGOYLE Lubricants

SOCONY-VACUUM

SOCONY-VACUUM OIL CO., INC. and Affiliates: Magnolia Petroleum Co. General Petroleum Corporation

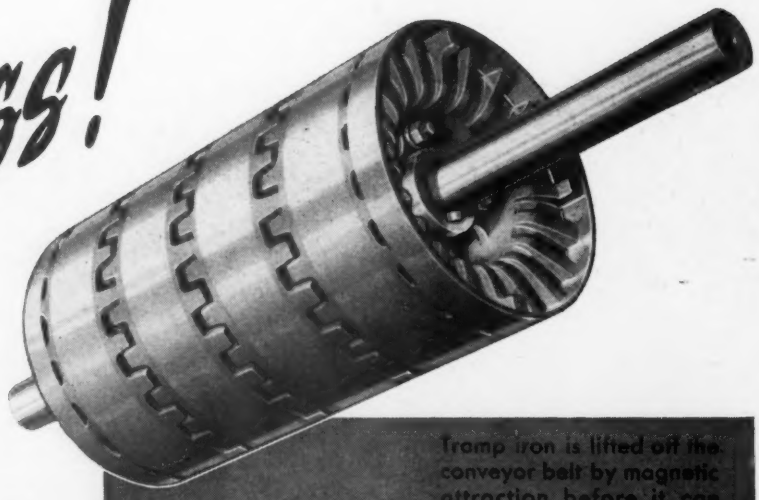
Socony-Vacuum Correct Lubrication

FOR EVERY MACHINE . . . EVERY OPERATING CONDITION

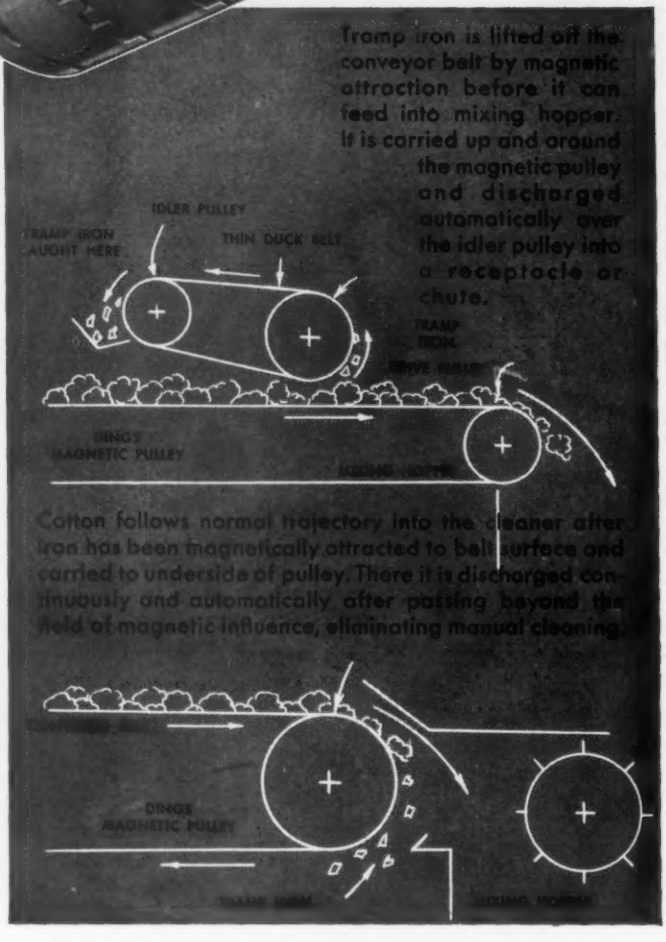
DINGS MAGNETIC PULLEYS

GIVE *Maximum* PROTECTION AGAINST

Fire Loss!



EFFECTIVE tramp iron removal on conveyor belts is a man-sized job—it requires the greatest possible magnetic strength. Dings Magnetic Pulleys have that strength—*with many times the effective range of non-electric magnets!* Estimates indicate that 80% of all opener-picker fires are caused by tramp iron. *Lost production—damaged machinery—costly repairs are the result.* You can eliminate these losses in your mill by installing the powerful, positive protection—Dings Magnetic Pulley protection—offered by the world's largest exclusive manufacturers of magnetic equipment. Write Dings for complete data today.


Tramp iron is lifted off the conveyor belt by magnetic attraction before it can feed into mixing hopper. It is carried up and around the magnetic pulley and discharged automatically over the idler pulley into a receptacle or chute.
IDLER PULLEY
TRAMP IRON CAUGHT HERE
THIN DUCK BELT
TRAMP IRON
DRIVE PULLEY
DINGS MAGNETIC PULLEY
Cotton follows normal trajectory into the cleaner after iron has been magnetically attracted to belt surface and carried to underside of pulley. There it is discharged continuously and automatically after passing beyond the field of magnetic influence, eliminating manual cleaning.
DINGS MAGNETIC PULLEY

Dings

"HIGH INTENSITY"

"SEPARATION HEADQUARTERS SINCE 1899"

Dings Magnetic Separator Co.
4700 W. McGeogh Ave., Milwaukee 14, Wisconsin

SANDOZ PRESENTS *the color achievement of the month*

Pace Setters BY INTERWOVEN

It's socks like these that have given Interwoven its reputation for keeping out front in the men's fashion race... have made Interwoven the world's largest manufacturer of men's socks.

Since "socks appeal" comes largely from color, Sandoz is proud to be among those suppliers whom Interwoven designers can count upon in creating sales-attracting designs. Sandoz dyestuffs—in addition to providing the perfect dyeing qualities that a mass producer like Interwoven must have—stand up under service, joining with top-quality yarn and artful construction to give the customer the longest possible satisfactory wear.

Sandoz products widely used for half hose are fast-to-washing Azoform and Viscoform colors for cotton and rayon, and the Xylene Milling and Sulfonine colors for wool and nylon. A typical Sandoz specialty is Thiotan RS used with selected dyestuffs for producing white wool and nylon effects in mixed hose or for obtaining more solid results on wool-cotton blends.

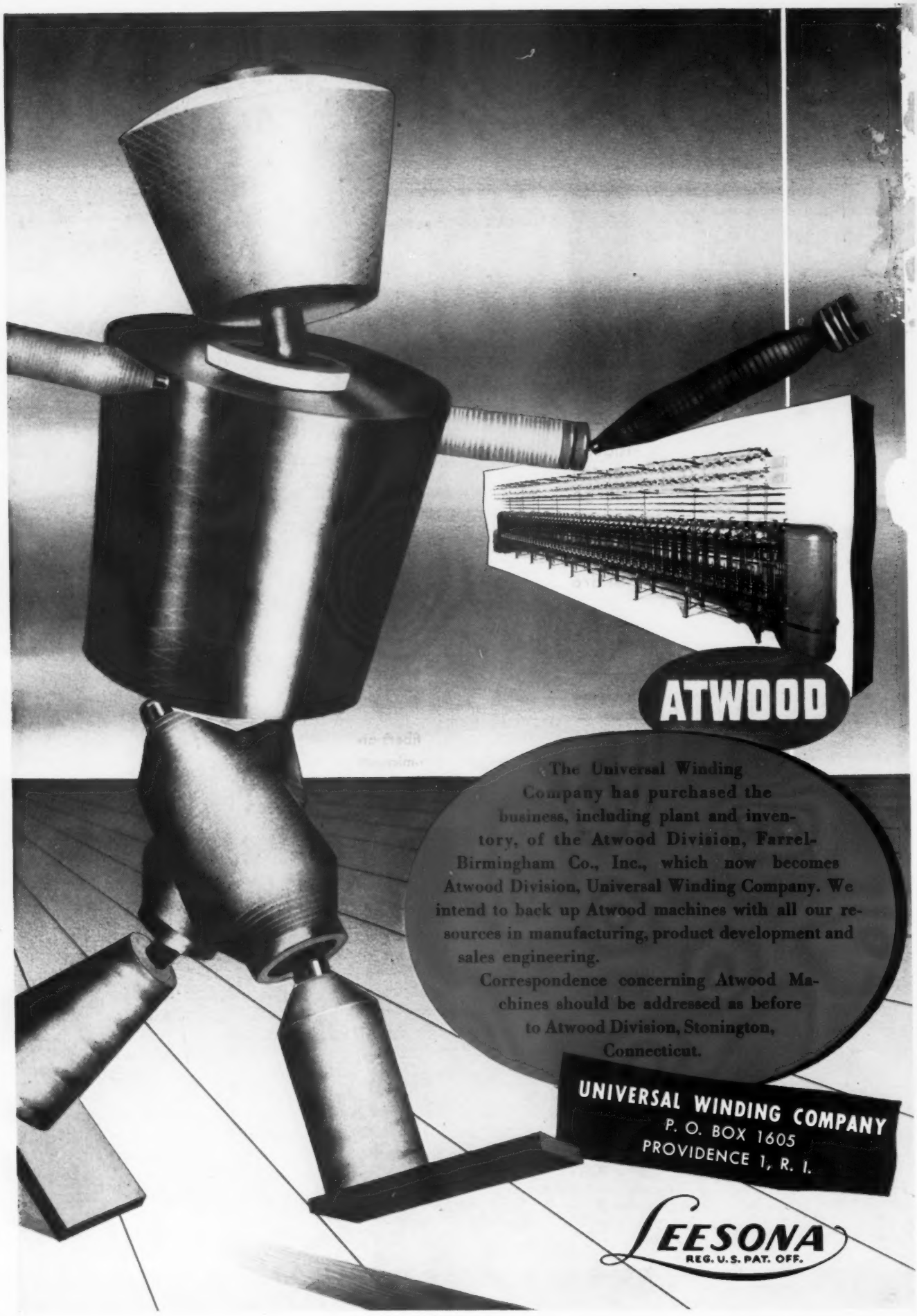
For acid, chrome or direct dyes... or auxiliary chemicals... for both natural and synthetic fibres... be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are located in New York, Boston, Charlotte, Philadelphia, Los Angeles and Toronto, where stocks are carried. Branches in Chicago, Paterson and Providence.

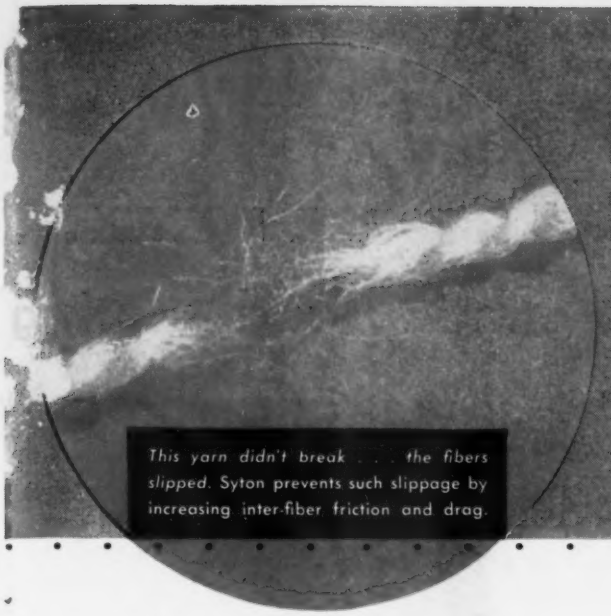
DETROIT PUBLIC LIBRARY

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

SANDOZ *thinks ahead with textiles*

SANDOZ


ATWOOD
The Universal Winding Company has purchased the business, including plant and inventory, of the Atwood Division, Farrel-Birmingham Co., Inc., which now becomes Atwood Division, Universal Winding Company. We intend to back up Atwood machines with all our resources in manufacturing, product development and sales engineering.
Correspondence concerning Atwood Machines should be addressed as before to Atwood Division, Stonington, Connecticut.
UNIVERSAL WINDING COMPANY
P. O. BOX 1605
PROVIDENCE 1, R. I.
LEESONA
REG. U.S. PAT. OFF.



This yarn didn't break . . . the fibers slipped. Syton prevents such slippage by increasing inter-fiber friction and drag.

SYTON

a new chemical that improves worsteds . . . with fiber drag

Fiber drag . . . usually considered the enemy of speed and quality in worsted production . . . has been put to work with good effect by Monsanto textile chemists.

With this revolutionary development, Syton, it is now possible to create effective beneficial and interfacial drag between fibers.

These results promise new high standards in textile production.

1. Yarn strengths have been increased up to 40%.
2. Fabrics from Sytonized yarns are finer.
3. Important economies in manufacture have been effected.

WHAT IS SYTON?

Syton is a colloidal dispersion in water of highly polymerized silica. It is a carefully purified, non-abrasive particle with a diameter of less than 1/400,000 of an inch.

HOW DOES IT WORK?

As fibers are treated with a solution of Syton these sub-microscopic particles coat the fibers, leaving there a tough, non-tacky, translucent film that greatly increases the co-efficient of friction between fibers.

advantages of Syton in worsted spinning

Six important advantages result from the application of Syton, the first basic chemical improvement for worsted spinning practice in 40 years:

1. Reduction of twist, without strength loss.
2. Produces loftier yarn.
3. Reduces aging time after oiling.
4. Has reduced ends down on spinning frame up to 50%.
5. Produces more uniform yarn.
6. Cuts spinning time and cost.

If you or your technicians want to read the full report on this new Monsanto textile chemical, write: MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, 140 Federal Street, Boston 10, Massachusetts.

Syton: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

HYCAR AMERICAN RUBBER LATEX...

a new material for impregnating and coating fabrics, fibres, and threads

HYCAR latex, when used as a coating or impregnant for even inexpensive materials, imparts many desirable properties not easily obtained with other coatings and impregnants.

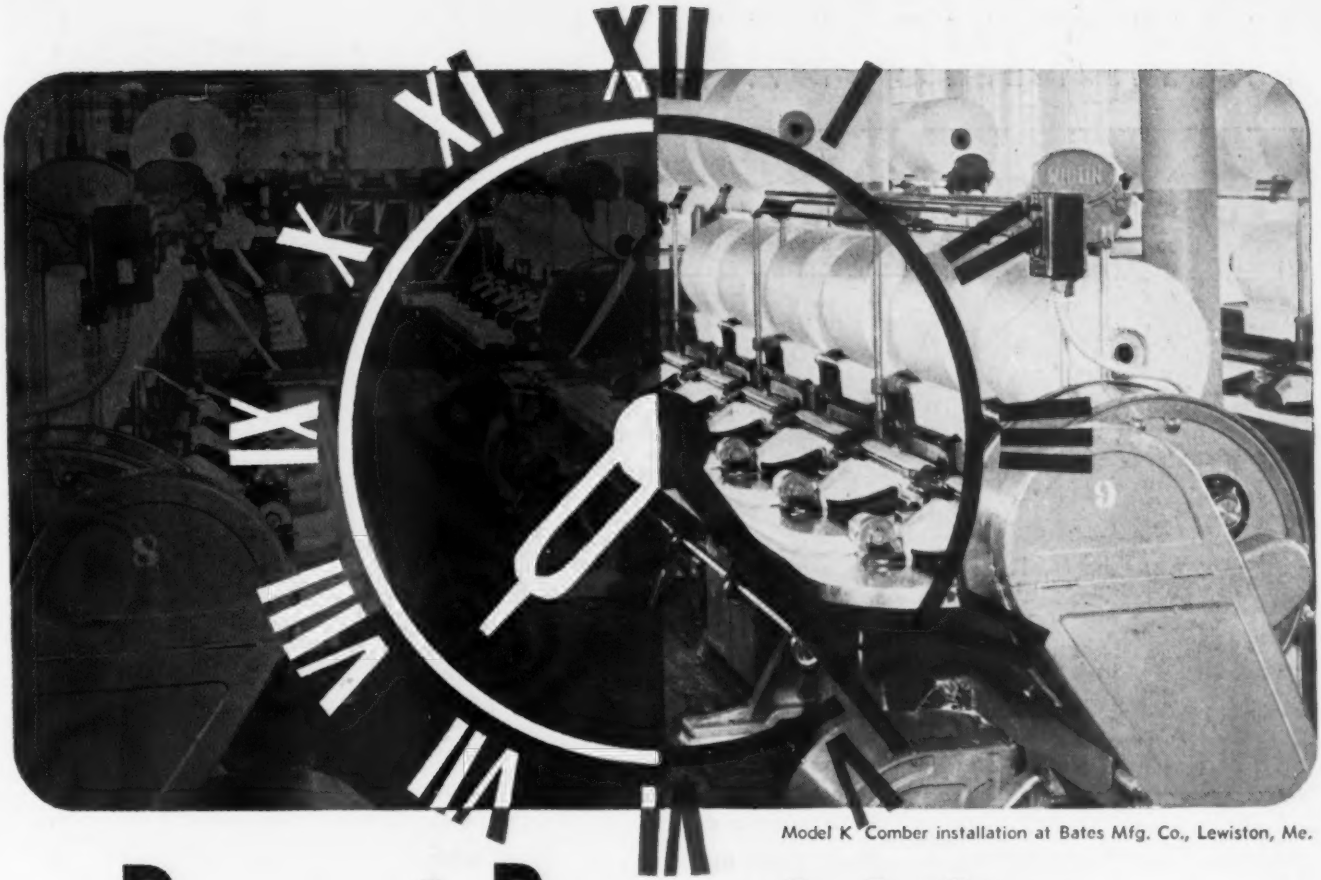
For example, high resistance to oils, chemicals, abrasion, and flexing—to name a few—are added in very desirable degrees by HYCAR latex, used as an impregnant or a coating. And HYCAR-impregnated materials may then be coated with any one of a number of other materials to impart additional properties.

All of this can be done, safely and simply, with HYCAR latex, because it's an inherently easy and safe material to handle. No vulcanization is required. Normal drying times are used. No explosive solvents need be handled. Nor is there any need for cumbersome and costly solvent recovery systems.

We would be glad to work with you on any problems relating to the use of HYCAR American rubber latex. For more information write Dept. HL-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Hycar
Reg. U. S. Pat. Off.
American Rubber

B. F. Goodrich Chemical Company
A DIVISION OF THE B. F. GOODRICH COMPANY



Model K Comber installation at Bates Mfg. Co., Lewiston, Me.

Rugged Dependability

. . . from shift to shift!

AROUND-THE-CLOCK PERFORMANCE BY WHITIN COMBERS

CONTROLLED high quality through every manufacturing operation is largely responsible for the enviable reputation enjoyed by the Bates Mfg. Company. Famous for their quality bedspreads, their combed percale sheets are a worthy addition to the widely known Bates Line. To maintain top quality and achieve high production on these fine sheets, Bates has installed a battery of ten Whitin Model "K" combers. Operating over a period of months on a brutal day and night around-the-clock schedule, these machines have been delivering combed sliver which meets the rigid standards required for this quality product.

Based upon their performance under exacting mill conditions you too may install these rugged Whitin Combers with full confidence. The Model "K" Comber will stand up and produce combed sliver of highest quality at an excellent production rate.

Whitin MACHINE WORKS

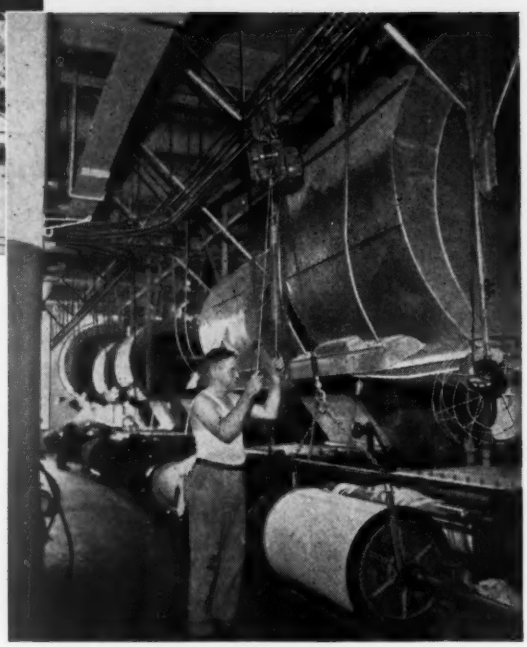
WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.

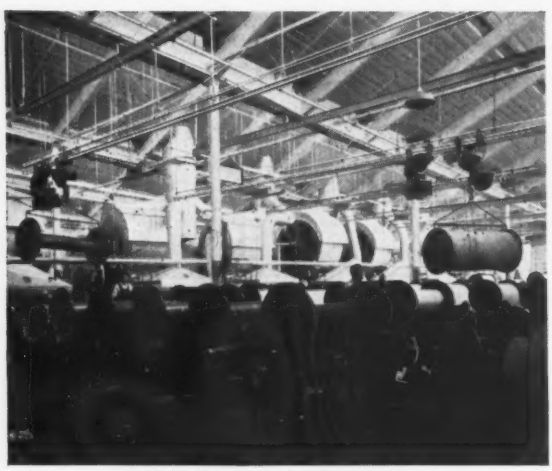
HANDLING BEAMS

The Easy Way!

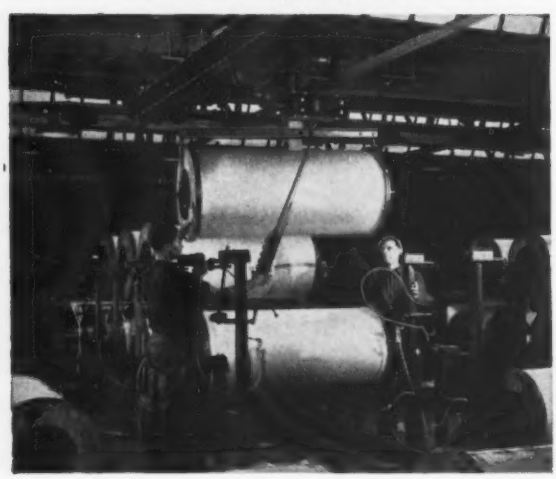
Free moving crane serves long weave room bays.



Electric hoist doffs beams quickly from slashers.



MonoTractor hoist unit creels slasher by fingertip control.



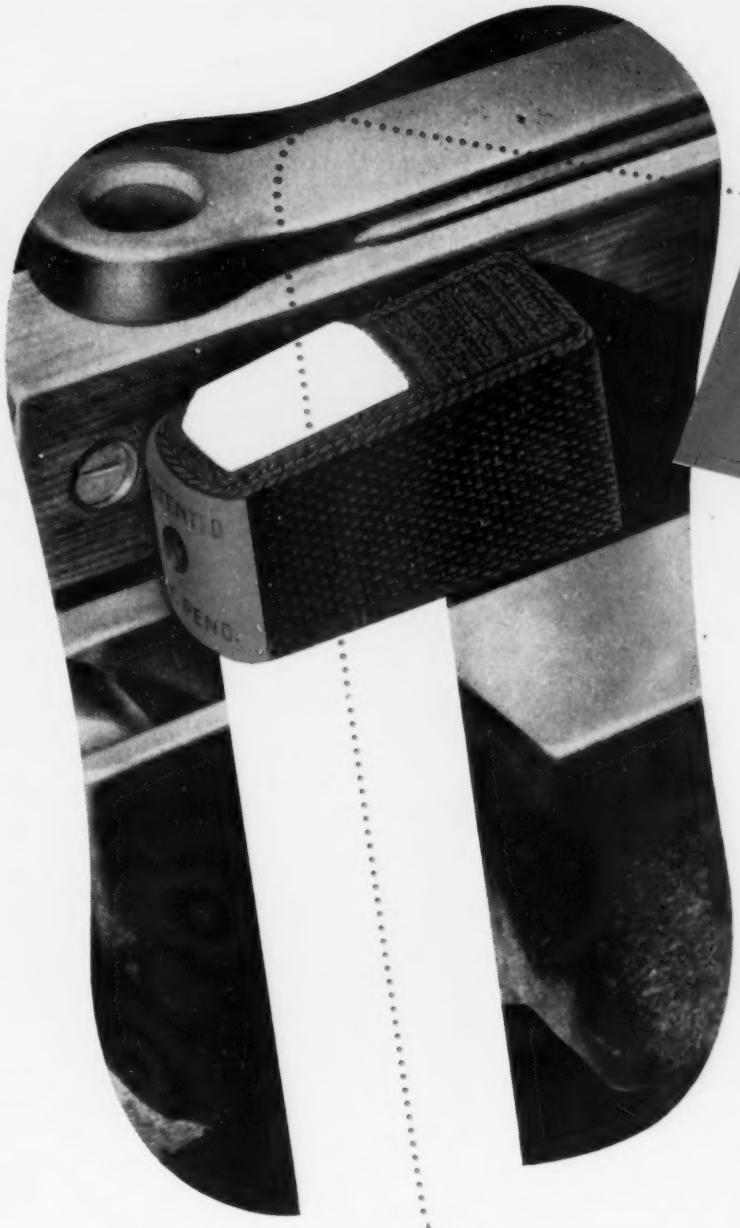
Power operated crane and carrier assures accurate spotting.

Beams and rolls move fast and safely when American MonoRail Overhead Systems serve your warpers, slashers and looms. These systems not only save time and money, they reduce fatigue and accidents, eliminate congestion and spoilage, and keep production on schedule without delay.

With thousands of installations to draw from, American MonoRail Engineers are well qualified to offer solutions involving overhead handling equipment. This service is offered without obligation.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE ● CLEVELAND 7, OHIO



No equal for "staying put" on the picker stick

Dayton De Luxe Loop Pickers are virtually "built around a hole" designed to meet all characteristics of the picker stick. Practical design includes a slightly flared bottom so that when the picker is started onto the stick the taper prevents tearing of the loop ply and facilitates centering. When the Dayton picker is driven onto the stick, there is nothing to break . . . nothing to expand. Dayton design, plus specially-patented symmetrical loop construction, anchors it into position and *holds it in place indefinitely.*

Too, the specially-designed picker stick hole includes "forward tilt". Another Dayton feature which insures *correct shuttle contact.* For the complete story write:

TEXTILE PRODUCTS DIVISION
DAYTON RUBBER
Main Sales Office: Woodside Building, Greenville, S. C.
Factory: Waynesville, N. C.

ADDITIONAL REASONS WHY YOU SHOULD SPECIFY DAYTON LOOP PICKERS

- Loom can be boxed the same at all times.
- Keep their shape.
- Easy to install—fit the stick.
- Made of especially woven fabric.
- Roughness reduced to absolute minimum.
- Jerked-in fillings are reduced to a minimum.
- Cuts picker costs as much as 50%.
- Only picker built to stand pounding of high-speed loom.
- "Stay put" on stick.
- All pickers uniform in size.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

MANY STUDIES . . .

One Objective . . .

to give you Finer Fabric at Lower Cost, from every New C&K Loom

▶How to increase shuttle-speeds, yet at the same time handle shuttle-velocity which *now* attains 40 mph from a dead stop in 1/30th of a second?

▶On the other hand, how to bring this speeding shuttle to a smooth stop so as to prevent yarn-breakage and binder-chatter?

▶How to select and substitute a full bobbin for an empty one, and complete the transfer in 1/20th of a second?

▶How to gain and maintain a delicate balance in "sideslip" feelers (which should be always positive-acting, yet never sever the yarn)?

▶How to provide "fingertip" clutch-operation, yet reduce adjustments, bang-offs, parts-breakage?

These studies and more have been detailed on these pages during recent months. But these are just a few of the projects in progress in C&K's Engineering Research Laboratories, each project aimed at the end-result of *increasing your own weaveroom efficiency and profit*. And to make sure of its value to you, every new idea produced by these studies . . . in method, material, or design . . . must answer yes to the challenge of *at least one* of C&K's "6 Sentries":

1. Does it increase Speed of Loom Operation?
2. Does it increase Ease of Loom Operation?
3. Does it improve Quality of Fabric?
4. Does it decrease Cost of Maintenance?
5. Does it improve Continuity of Operation?
6. Does it improve Appearance and Utility?

And there, we submit, is the *soundest future profit-protection* you can have!

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N.C. • ALLENTOWN, PA.

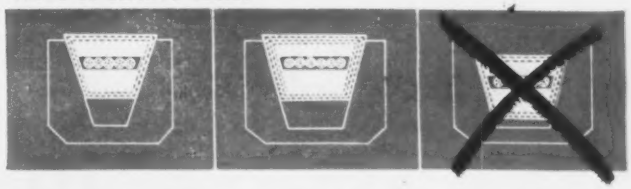
CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

between Today's Knowledge . . . and Tomorrow's Looms

Now You Can Get Worthington QD Sheaves at Substantial Price Reductions

Worthington's increased production of QD Sheaves — to meet industry's growing demands—has resulted in lower production costs, which we pass along to you — our customer, as a substantial price reduction in stock "A" and "B" sheave sizes. Service has been improved, too! From conveniently located stocks you can choose over 25,000 QD Sheave combinations for V-Belt drives ranging from fractional to 200 hp.

Strength Where It's Needed Most. Upper sketch shows I-Beam construction in Worthington QD Driven Sheaves. Compare it with conventional design below and note how material is concentrated where strain is greatest — putting strength where strength is needed most. Taper-mated, load-tested hubs and rims, full-sized pull-up bolts and I-Beam arm construction are Worthington features which make the QD Sheave the "Strongest Sheave for its weight ever made" — a plus value to sheave users.

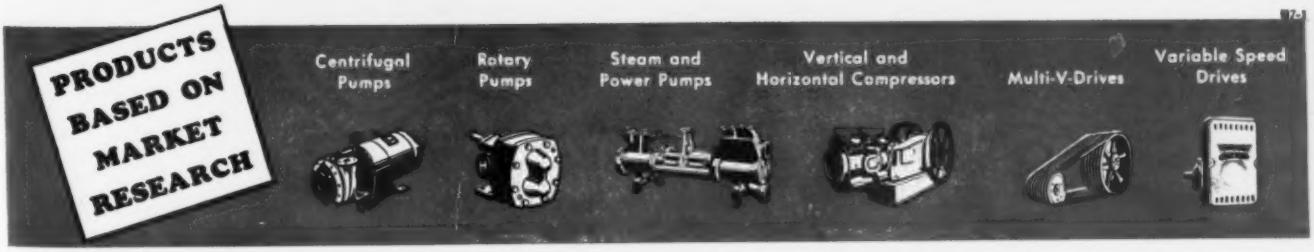


Customer Preference Based on Market Research. Customer preference dictated a basic change in the original QD Sheave from a combination groove to a separate "A" and a separate "B" groove — which is what you, our customer, wanted — to give you a better appearing sheave and a better fit between belt and groove. Worthington QD Sheaves are custom-built to fit the belt — an "A" belt in an "A" groove — a "B" belt in a "B" groove. Available in listed stock sizes from 3" to 22" diameters in "A" section; from 4" to 38" in "B" section.

Get the Proof. A demonstration in your own shop will convince you that only Worthington — the original QD Sheave — is Easy to Get On — Easy to Get Off — Yet Always Tight on the Shaft — proof that *there's more worth in Worthington.*

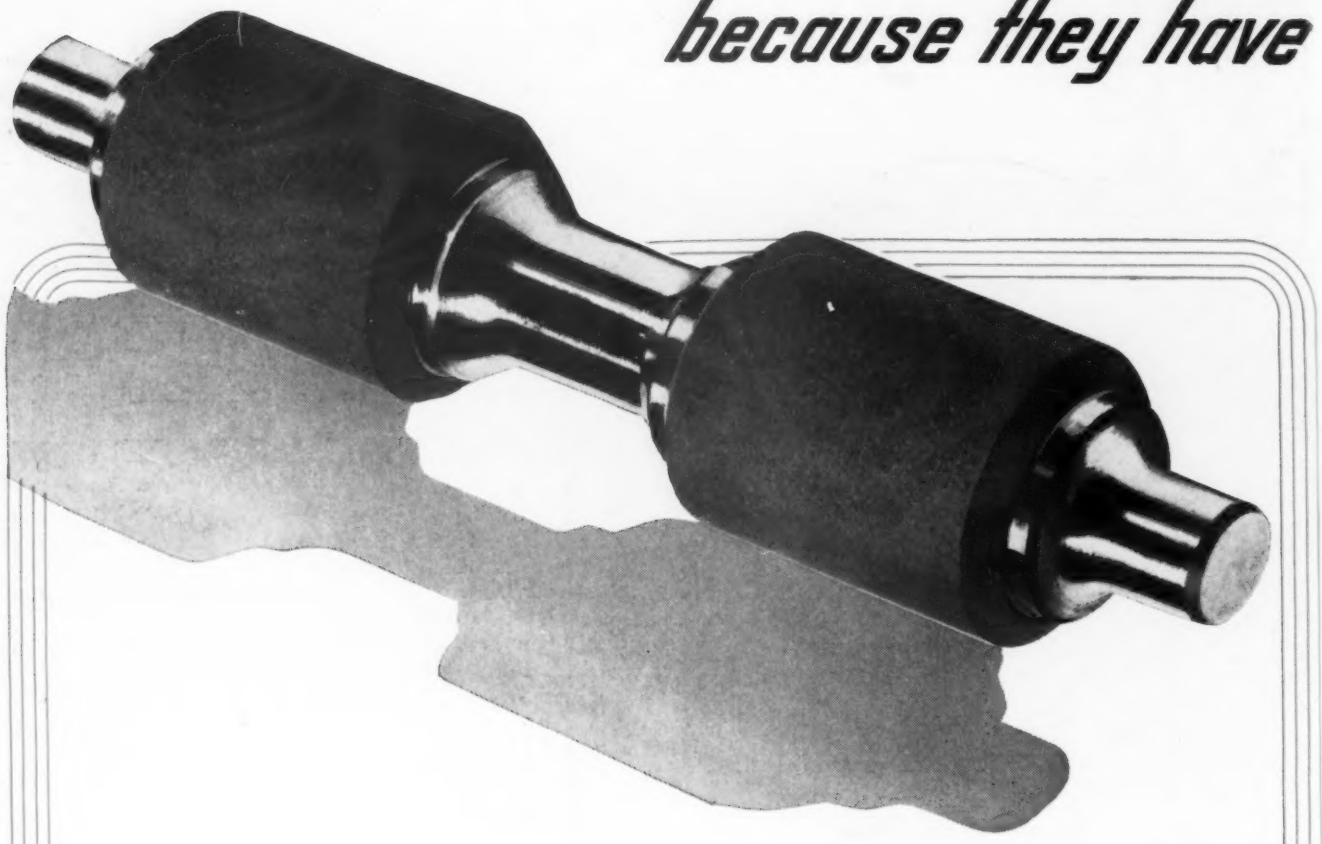
Contact your nearest distributor for a demonstration today. Worthington Pump and Machinery Corporation, Merchandising Div., Harrison, N. J. 36 District Offices throughout U. S.

WORTHINGTON



ACCOTEX COTS *spin*

because they have



8 ADVANTAGES OF ACCOTEX COTS

1. LONG SERVICE—Accotex Cots are tough. And they can be rebuffed five or six times.

2. GOOD DRAFTING—Accotex Cots retain their excellent grip, because their cork-and-rubber composition resists slicking.

3. REDUCED EYEBROWING—The resistance to slicking minimizes eyebrowing.

4. REDUCED LAPPING—Accotex Cots have little affinity for textile fibers and are non-sweating even in humid weather.

5. GOOD START-UP—Accotex Cots are non-thermoplastic and resist flattening.

6. SOLVENT RESISTANCE — Accotex Cots are not affected by oil, water, dyes, or commonly used textile solvents.

7. SEAMLESS CONSTRUCTION—Accotex Cots have no seams, no structural weaknesses to cause failure in service.

8. QUICK ASSEMBLY—Accotex Cots are ready glued for easier, quicker assembly. Simply moisten glue and apply cot.

ARMSTRONG'S ACCOTEX COTS

quality yarn longer

rubber's toughness and cork's "grip"

Because Accotex Cots combine the advantages of both synthetic rubber and cork, they spin quality yarn longer than "straight" synthetic covers. Specially compounded synthetic rubber gives Accotex toughness. High-friction cork provides consistently better drafting for consistently high yarn strength. And because cork also helps prevent slicking, Accotex Cots don't need the frequent rebuffing that does so much to shorten cot life.

You get other spinning advantages from this combination of cork and synthetic rubber. Accotex Cots eyebrow less and their resilience provides quick recovery from hard ends And since they can be rebuffed as many as five or six times, Accotex Cots give you that many extra full service lives.

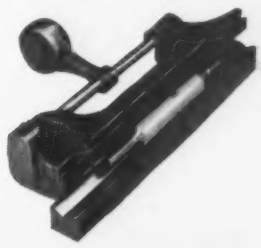
Longer life and better drafting are only two of eight important reasons why these superior cots are now serving more spindles than any other roll covering. Check your present roll coverings against the facts about Accotex listed at left. Then ask your Armstrong representative for samples, prices, and any additional information you may want. Or write today to Armstrong Cork Company, Textile Products Department, 8307 Arch Street, Lancaster, Pennsylvania.

COMPLETE ROLL COVERING SERVICE

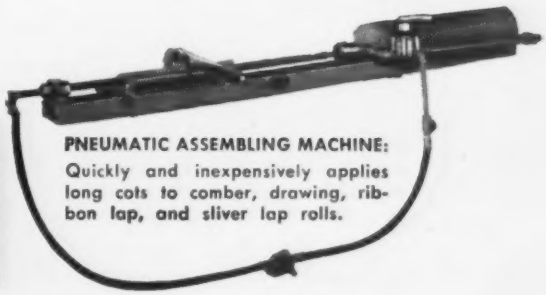
You can get everything you need for complete roll covering service from your Armstrong representative. He can supply not only all three modern types of covers but also the roll shop equipment required to apply and service them.

BUFFING MACHINE:
Precision-buffs all modern types of cots. Adjustable for lengths and diameters of rolls ordinarily used.

ASSEMBLING MACHINE:
Hand-operated. Facilitates accurate, speedy assembly of ready-glued cork or synthetic cots to spinning and card room rolls. Handles cots up to 4½" long.



ROLL TESTING GAUGE:
A paralleling device used to guide the setting of the buffing machine and to check trueness of rolls after they have been rebuffed.



PNEUMATIC ASSEMBLING MACHINE:
Quickly and inexpensively applies long cots to comber, drawing, ribbon lap, and sliver lap rolls.

CORK COTS ACCOTEX APRONS
ROLL SHOP EQUIPMENT

"NEW CARD CLOTHING Will *pep up* Our Whole Mill!"

A good superintendent knows that high grade carding means increased operating efficiency in every other department . . . he realizes the importance of getting production off to the right start.

With new Tuffer card clothing on your cards you will increase production and obtain the quality so necessary for strong, even yarns. You know this means increased output in the card room, spinning room and in the weave room.

Let a Howard Bros. representative inspect your card clothing. He is qualified to make recommendations that will improve production throughout your mill!

HOWARD BROS. MFG. CO.

WORCESTER 8, MASSACHUSETTS

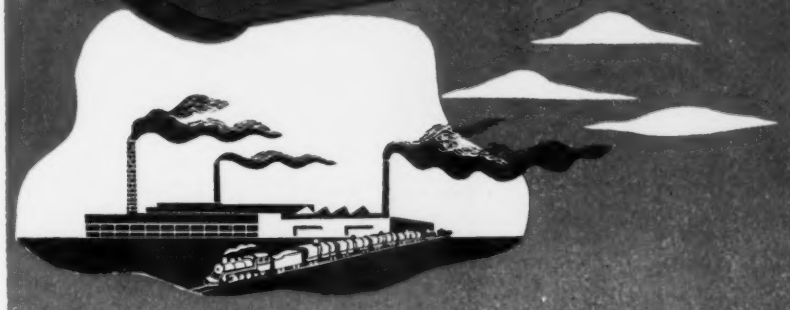
Southern Plants: Atlanta, Ga. and Gastonia, N. C. **Branches:** Philadelphia, Pa. and Blanco, Texas
Direct Representation in Canada

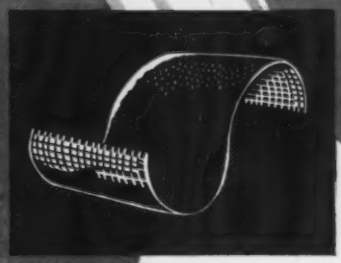
A-2

TUFFER CARD CLOTHING

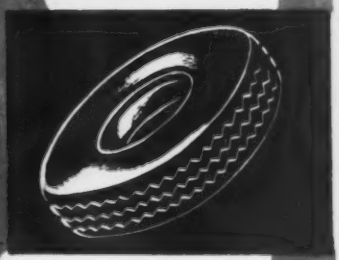
IMPROVES PRODUCTION ALL ALONG THE LINE

Fountain of USE!

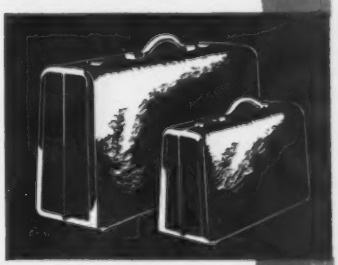




● Flintkote Sealants are widely used for fabric sizing, and in the Rug and Carpet industry to improve wear and appearance of the finished product.



● In tire manufacture, Flintkote Tire Cord Solutioning for rayon and cotton tire cord insures a firm, durable bond of rubber to carcass...so important to tire life.



● New adhesives are replacing stitching, riveting and other old methods of fastening in many industries. Many luggage makers save time and money by assembling with Flintkote Industrial Adhesives.

● Flintkote Binder Compounds are helping many fabricators speed up their production. Among the uses of such compounds are curled hair (above) and glass fibers.

● Out of Flintkote research flows new *utility* for elastomers. With it, come advantages in performance and *use* to manufacturers and processors.

Flintkote has applied research to many compounding problems. And, as a result, offers a wide line of rubbers, resins, latex compounds and asphalts, both as aqueous dispersions and solvent cements.

These materials...designed for standard or special requirements...are supplied either by drum or tank-car.

If some saturating, laminating or bonding requirement is giving you trouble, let us help. Our technical staff will be glad to work right along with you to formulate just what you need. Write us today.

FLINTKOTE

Products for Industry

FLINTKOTE INDUSTRIAL PRODUCTS

THE FLINTKOTE COMPANY, *Industrial Products Division*

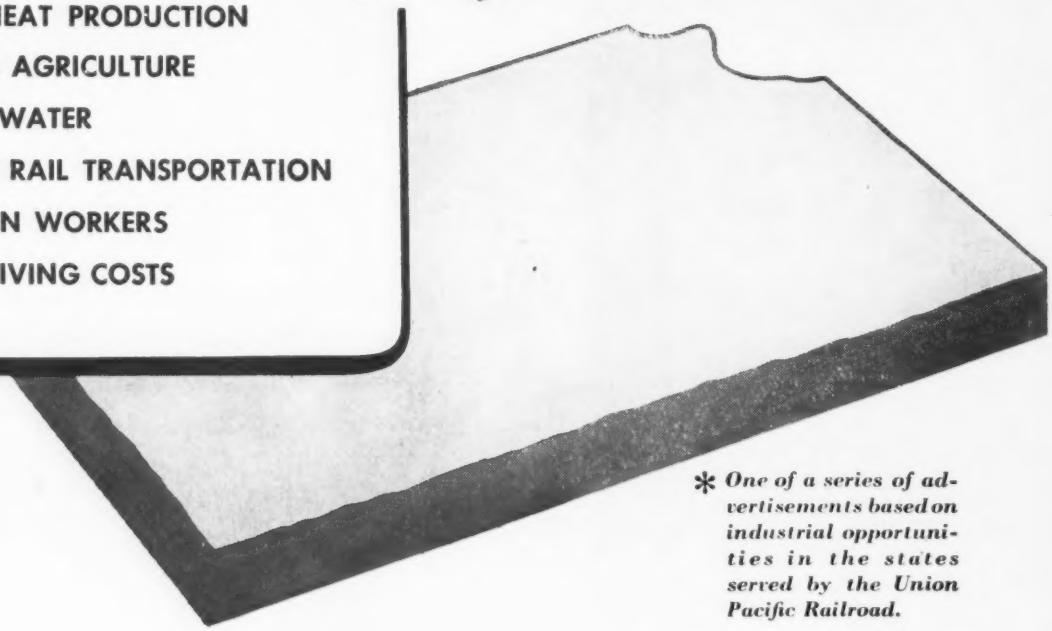
30 Rockefeller Plaza, New York 20, N. Y. • Atlanta • Boston • Chicago Heights
Detroit • Los Angeles • New Orleans • Washington • Toronto • Montreal

UNION PACIFIC

TREASURE MAP OF INDUSTRY

RICH NATURAL RESOURCES
CENTER OF NATIONWIDE MARKET
PROGRESSIVE INDUSTRY
FIRST IN WHEAT PRODUCTION
PRODUCTIVE AGRICULTURE
ABUNDANT WATER
DEPENDABLE RAIL TRANSPORTATION
NATIVE BORN WORKERS
MODERATE LIVING COSTS

Kansas *



* *One of a series of advertisements based on industrial opportunities in the states served by the Union Pacific Railroad.*

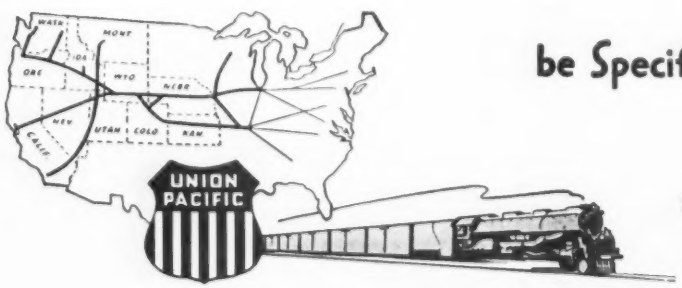
KANSAS—almost in the exact geographical center of the United States; an important factor to industries serving nationwide markets.

Agriculture is king. Kansas normally ranks first in wheat production. In addition to grains, vegetables and fruits, a large part of farm income is derived from livestock and poultry.

Kansas industry keeps step with agriculture. There are approximately 2,500 manufacturing and processing establishments. Over four million tons of coal are mined annually. Here is the largest natural gas field in the world. Eighteen principal rivers with two great watersheds provide an abundance of water. The population is 97 per cent native born.

★ ★ ★

Kansas . . . the hub of a rich market; a treasure chest of natural resources with dependable labor; outstanding public health record; moderate living costs; and excellent transportation over Union Pacific rails.



be Specific – say

"Union Pacific"

* *Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska, for information regarding industrial sites.*

UNION PACIFIC RAILROAD

THE STRATEGIC MIDDLE ROUTE

Veeder-Root Vantage-Points

Here's How

COMPRESSION CLAMPS

Save Time and Money in Installing VEEDER-ROOT 2-3 PICK COUNTERS

1 A screw driver, two Veeder-Root Compression Clamps and screws with special clamping tool — all that are needed to lock the drive worm of a Veeder-Root 2-3 Pick Counter to a loom shaft. Quickly and easily attached. Eliminates drilling and weakening the shaft.

2 Put a small amount of heavy cup grease in the cored recess of the worm and push each clamp down into position. The grease holds the clamps in place while the worm halves are placed on the shaft.

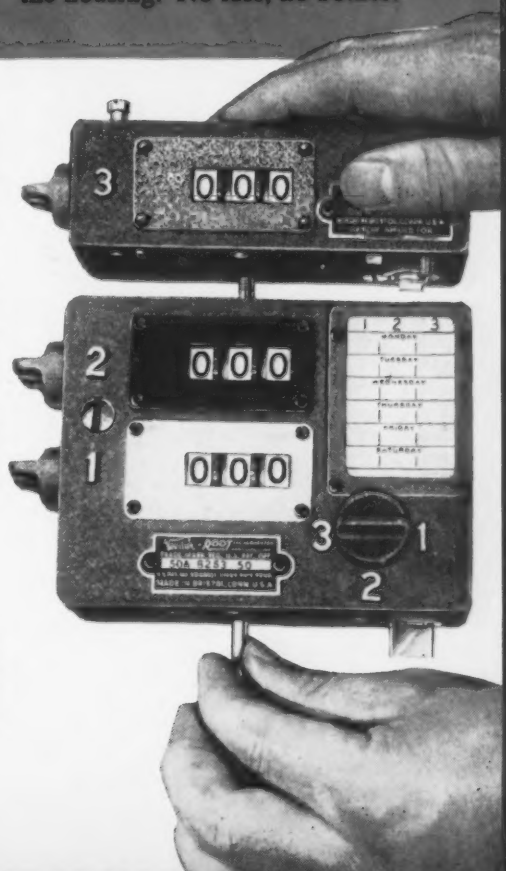
3 Turn down evenly the four holding screws — each with a lock washer under its head. The Compression Clamps spread, the teeth bite into the shaft and lock the worm firmly in place. The job is done and ready for the housing. No fuss, no bother.

"THEY SAVE IN PICK COUNTER INSTALLATION COSTS!" . . . that's what mills say about Veeder-Root Compression Clamps. And that's because these teeth grip securely with 16 teeth, top and bottom. What's more, they save time in fitting the worm on the shaft . . . and if the shaft is a little out of size, the Compression Clamp takes care of it, without any need for shims.

This is one of the many advantages you get with Veeder-Root 2-3 Pick Counters . . . the counters that are quickly convertible right in your mill. Call the nearest Veeder-Root office today . . . have them send a trained Field Engineer to see you . . . and *show you* this exclusive money-saving advantage.

VEEDER-ROOT 2-3 Pick Counters

Quickly Convertible from 2 to 3-Shift Operation . . . Right in Your Mill



VEEDER-ROOT INC.
HARTFORD 2, CONN.
GREENVILLE, S. C.

OFFICES IN: Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Montreal, Buenos Aires, Montevideo, Mexico City. *In England:* Veeder-Root Ltd., Dickinson Works, 20 Purley Way, Croydon, Surrey. *In Canada:* Veeder-Root of Canada, Ltd., Montreal.

Take your choice:

FOR SCOURING AND DYEING RAYON KNIT GOODS

Some rayon processors prefer soaps for scouring and dyeing knit goods. With others the choice is synthetic detergents. Whatever your own preference may be, you can count on excellent performance with either Olate or Orvus. If you have never used these time-tested products, a comparison of their special characteristics may be helpful in determining which will best suit your needs.

PROCTER & GAMBLE

*Orvus is available in paste or granule form. Discuss your Orvus needs with your Procter & Gamble salesman.

Olate — *A pure, neutral soap of exceptionally low titer and gentle cleansing action.*

- *Fast dissolving.*
- *Excellent cleansing, lubricating, and wetting out properties.*
- *Free rinsing.*
- *Provides unusual safeguards against uneven shrinkage, streaks, dye blotches and chafe marks.*
- *Resistant to oxidation, rancidity and odor development.*

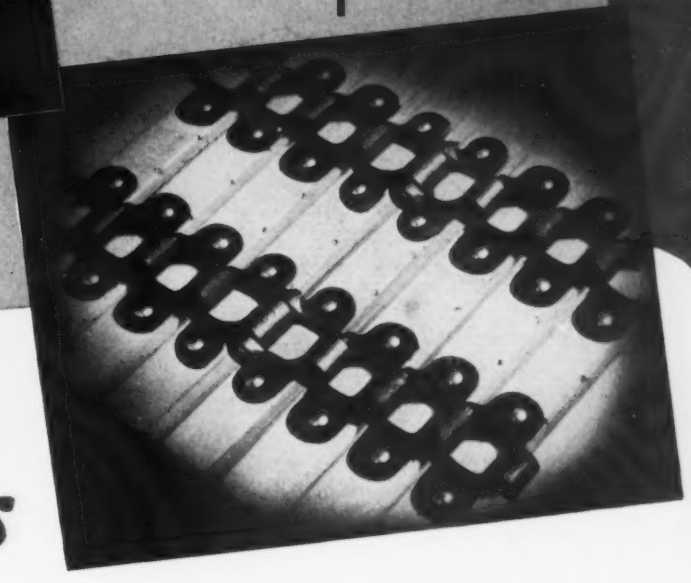
ORVUS* — *A time-tested, uniform, neutral, safe synthetic detergent.*

- *Ready solubility.*
- *Orvus scouring assures even dyeing and uniform bleaching.*
- *Rinses thoroughly and quickly.*
- *No danger of streaks, specks and spots from hard water soap deposits.*
- *Orvus-processed rayon fabrics are clean, have a desirable odor, and a full hand.*

SLAT APRONS

by SARGENT

Top and back views of a typical SARGENT Spiked Apron.



MADE TO YOUR SPECIFICATIONS

SARGENT has unlimited facilities for making slat aprons of all types and sizes, and to your exact requirements... feed aprons and conveyor aprons for various machines... doffer aprons for Wool Washing and Drying Machines... bottom and spike aprons for Automatic Feeders of all types. All are made from selected beech or maple that has been thoroughly air dried. Slats are fastened to chains, to leather or to rubber belts. Illustrated above are typical Sargent Spiked Aprons built up on especially strong malleable iron chains, supplied with convenient *coupling links*. These aprons also can be supplied with corrosion-resisting bronze chains, and either monel or stainless steel pins in the slats. Before ordering slat aprons please write us for Complete Information Bulletin (No. 182).

C. G. SARGENT'S SONS CORPORATION
Graniteville, Massachusetts, U.S.A.

production goes up when humidity stays put

Yarns run smoother when relative humidity in the textile mill is held constantly at the proper level. There is less static to make them "wild," less chafing, and fewer ends-out. That adds up to uninterrupted operation, increased production.

Close control of humidity is no problem at all with a Carrier Central Station Air Conditioning System. This scientific, year-round installation maintains any desired relative humidity *automatically*. It reduces temperature in summer, keeps it uniform in winter.

Mill operators especially like the low cost at which a central system can be maintained. Since the equipment is outside the mill proper, maintenance need not interfere with mill activities.

Carrier's name on air conditioning is a pledge of efficiency and dependability. In designing air conditioning, Carrier engineers draw on years of experience with textile mill problems. Their installations have stepped up output and improved quality for mills in many parts of the world. They're always glad to discuss your production difficulties. Carrier Corporation, Syracuse, New York.

Carrier

air conditioning

refrigeration

industrial heating

Afghan made entirely from 5-gram matched samples gathered from National Aniline's nationwide application laboratories.

WHEREVER COLOR IS USED

SPECIFY *National Aniline Dyes*

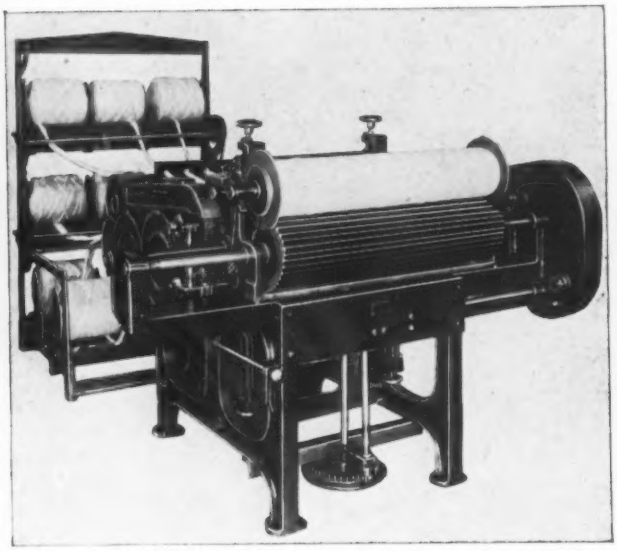
NATIONAL ANILINE DIVISION • ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N.Y.

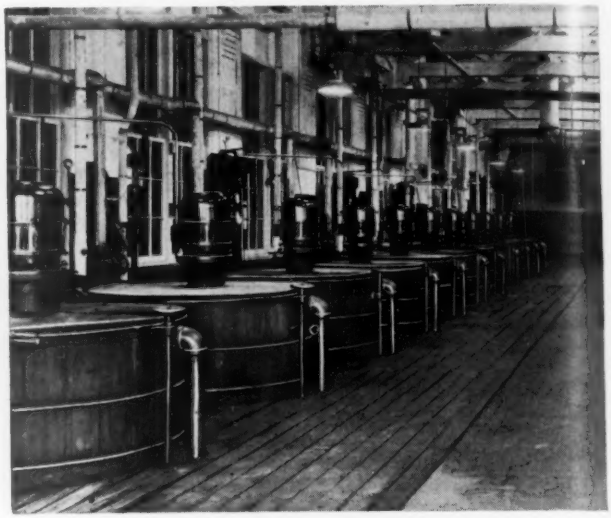
BOSTON • PROVIDENCE • PHILADELPHIA • CHICAGO • SAN FRANCISCO • PORTLAND, ORE.
GREENSBORO • CHARLOTTE • ATLANTA • NEW ORLEANS • CHATTANOOGA • TORONTO

ABBOTT
WORSTED TOP DYEING

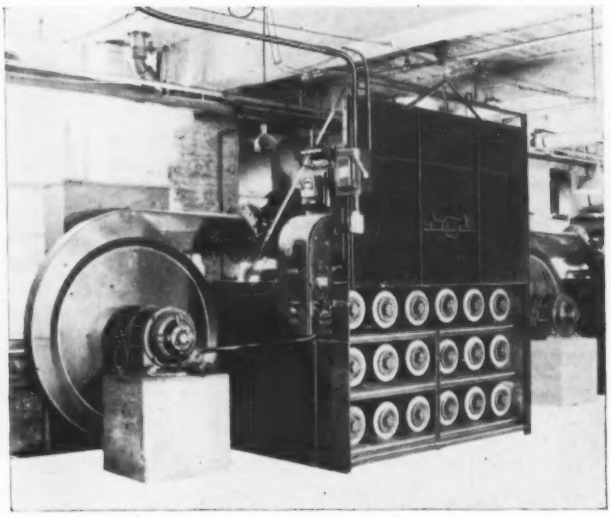
MOST OF THE WORSTED TOP IN THE UNITED STATES
IS DYED ON THE ABBOTT DYEING SYSTEM



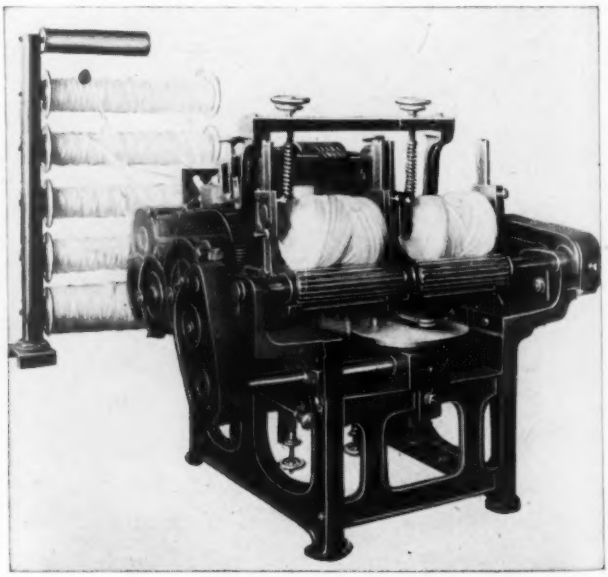
(1) Abbott Dye Spools Wound from Top on Special Spooling Gill



(2) Then, Dyed in Abbott Stainless Steel Dye Kettles



(3) and Dried in Abbott 18-spool Dryer



(4) Then, wound from Dye Spools on the Finishing Gill

No Backwashing or Recombing Required

ABBOTT MACHINE COMPANY
WILTON, NEW HAMPSHIRE
U.S.A.

BEARING FACTS NO. 4

HOW THESE PATENTED

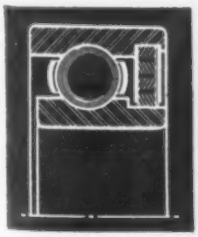
Felt Seal Ball Bearings

Help Reduce Production Costs of

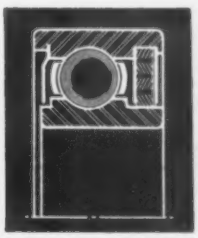
- ✔ **electric motors, generators**
- ✔ **portable tools**
- ✔ **domestic appliances**
- ✔ **fans**
- ✔ **pumps**
- ✔ **small high-speed devices**

These unique Norma-Hoffmann bearings are equipped with removable, replaceable seals. The thick felt seal, compressed between demountable, hardened spring washers, is entirely within confines of both rings and therefore is not exposed to injury. With the recessed inner ring, it forms a labyrinth that excludes foreign matter and retains the grease. Special seal construction eliminates race distortion; assures dimensional exactness and quiet running. Because of these features the Felt Sealed Bearings can help save production costs 6 ways:

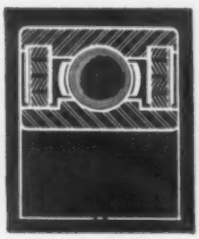
1. The built-in felt seal eliminates need for external sealing parts; saves machining, drilling, tapping.
2. More compact, simplified mountings result.
3. Assembly is speeded up.
4. Prepacked with Norma "Stability-Tested" grease, insures against "dry" bearings.
5. Seal retains grease; excludes dirt.
6. Full width outer ring obviates need for steel inserts in soft metal housings.



Single Felt Seal Ball Bearing



Single Felt Seal Ball Bearing with Shield



Double Felt Seal Ball Bearing

NORMA-HOFFMANN
***Precision* BEARINGS**

NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONNECTICUT
FIELD OFFICES: New York, Chicago, Cleveland, Detroit, Pittsburgh, Cincinnati, Los Angeles, San Francisco, Portland, Ore., Seattle, Phoenix

High employee morale, and superior health standards among workers, pay substantial dividends by increasing individual efficiency in modern industrial productioneering.

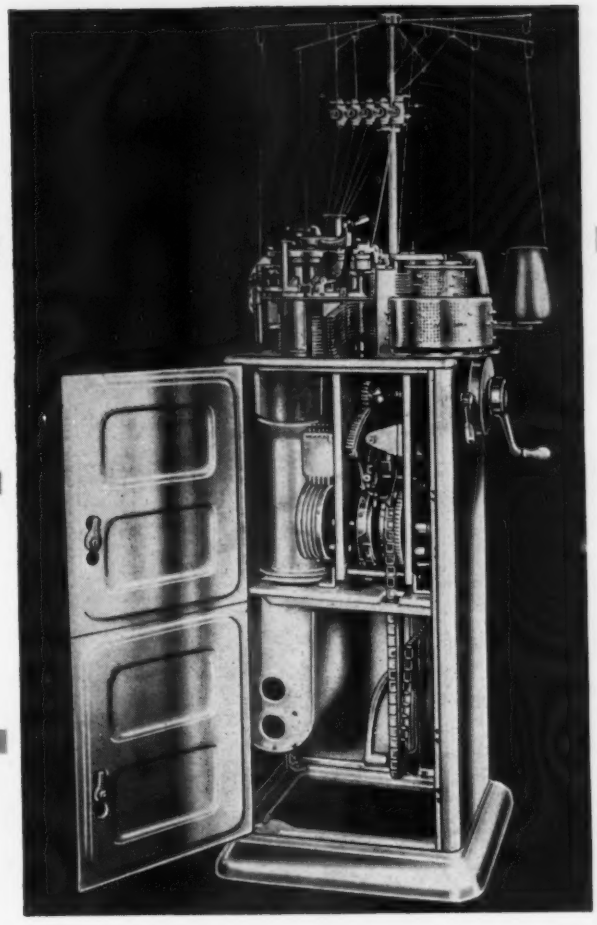
When you provide wash fountains, showers, first aid facilities, cafeteria accommodations you're taking the first important step. But the next step is even more important—you must furnish an adequate and constant supply of hot water at just the right temperatures for every purpose.

Modern GAS Water Heaters fulfill every requirement for hot water for sterilizing, dishwashing, showers, industrial laundries. With Gas-fired Water Heaters you can obtain a constant supply of water at any specified temperature and in any desired quantity.

The economy, flexibility, and speed of GAS and modern Gas Water Heating Equipment have been established in hundreds of installations. Your local Gas Company Representative will aid you in selecting equipment for your needs.

AMERICAN GAS ASSOCIATION
420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

MORE AND MORE...
THE TREND IS TO GAS
FOR ALL VOLUME WATER HEATING



"Holdstitch," new seamless knitting machine utilizes Reynolds Aluminum by American Textile Machine Corporation, Murfreesboro, Tennessee.

ALUMINUM cuts weight and cost in new seamless knitting machine

IN MAKING THEIR NEWLY DESIGNED "Holdstitch," American Textile cuts cost and weight by using Reynolds Aluminum in these ways:

Structural frame and elsewhere—extruded aluminum shapes replace cast iron. Aluminum is lighter, yet strong and sturdy.

Top mounting plate and base . . . of heat-treated aluminum castings.

Doors of high-strength aluminum sheet—open and close smoothly.

Maintenance is easy and inexpensive. Aluminum is rustproof, free from corrosion, requires no painting or coating. Its smooth, gleaming finish adds much to the pleasing appearance of the machine.

If you are designing a new machine or considering the purchase of new equipment, call in Reynolds textile engineers. Without any obligation they will help you take advantage of the many possibilities of aluminum design to cut costs and eliminate dead weight.

Write to our nearest field service office, or to Aluminum Textile Sales Division, Reynolds Metals Co., 2535 South Third Street, Louisville 1, Kentucky.

Other applications where strong, light, rustproof Reynolds Aluminum does a better job for the textile industry . . . and for you!

- **Traverse Bars**
- **Heddle Frames**
- **Stocking and Sock Boards**
- **Trident or Cheese Boards**
- **Cake Trays and Yard Trays**
- **Spinning Pots and Buckets**
- **Roofing and Skylight Frames**
- **Spindle Sleeves and Adapters**
- **Bobbins, Spools, Spinning Cylinders**
- **Loom Parts, Quills, Cans, Bins, Drums**
- **Bobbin Racks, Pin Boards, Cone Boards**

REYNOLDS METALS

REYNOLDS ALUMINUM

The Great New Source of

INGOT • SHEET • SHAPES • WIRE • ROD • BAR • TUBING • PARTS • FORGINGS • CASTINGS • FOIL • POWDER

USE RAYCO Fibers!

Just let us know *what* you want—we'll see that you get it *at just the price you want to pay.*

Whatever your requirements in comber noils, card strips, spinners and rovings (machined and unmachined), colored card strips and soiled card, we can meet your *exact* requirements.

We are able to offer you cotton, cotton and rayon blends; cotton, rayon and aralac blends and assorted rayon sweeps.

Place your order today and save money!

The RAILWAY SUPPLY & MFG. CO. and Affiliates

Specialists in Grading, Marketing and Processing Cotton and Synthetic Fibers

General Offices: Cincinnati, Ohio

Plants and Sales Offices: Cincinnati, Ohio • Franklin, Ohio • Atlanta, Ga. • Charlotte, N. C. • Covington, Tenn. • Greensboro, N. C. • Memphis, Tenn. • New York, N. Y. • Chicago, Ill. • Detroit, Mich.

RAYCO COTTON & SYNTHETIC FIBERS

"Gulf Quality Lubricants help us produce Grade A yarn"

says this Overseer of Carding

(Left) The Carder of this prominent southern mill checks yarn quality against the Grade A standard. (Right) The oiler lubricates the draw roll bearings with the quality oil recommended by a Gulf Lubrication Engineer.

"RIGID CONTROL OF EVERY PROCESS and near perfect operation of every machine are required to produce Grade A yarn," says this Overseer. "Gulf quality lubricants help us get the kind of machine performance we need—and keep maintenance costs low."

Are you entirely satisfied with the performance of your equipment? With your maintenance and power costs? Perhaps some improvement is possible through latest developments in petroleum science.

Why not call in an experienced Gulf Lubrication Engineer to consult with your operating and maintenance personnel in a further effort to improve your lubrication and reduce your costs? This trained specialist will recommend the proper oils and greases for every machine, and the best methods of application—then co-operate closely to keep lubrication on a sound, scientific basis the year around.

The helpful counsel of a Gulf Lubrication Engineer—and the complete Gulf line of more than 400 quality lubricants—are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION · GULF REFINING COMPANY

DIVISION SALES OFFICES:

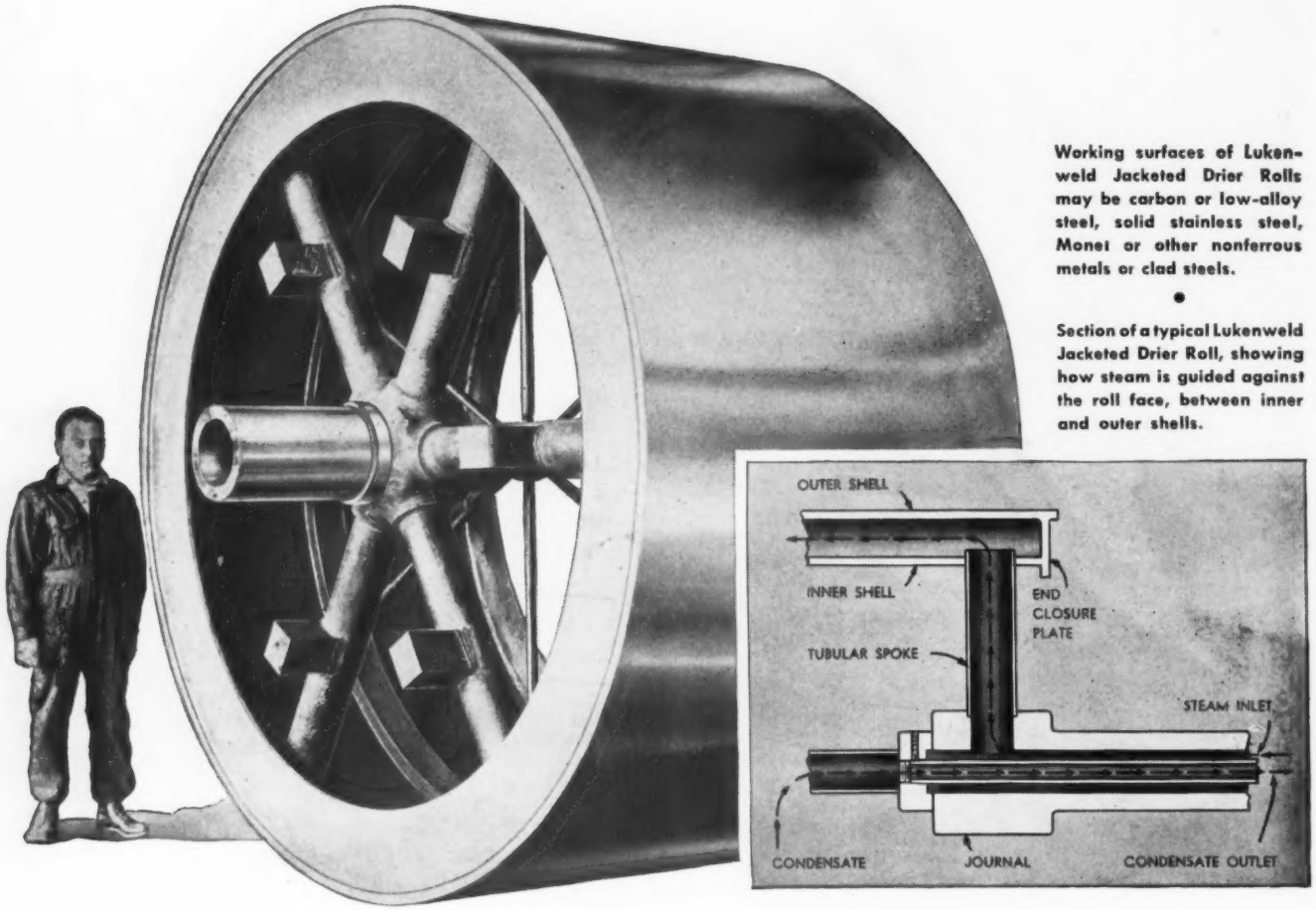
BOSTON · NEW YORK · PHILADELPHIA · PITTSBURGH · ATLANTA
NEW ORLEANS · HOUSTON · LOUISVILLE · TOLEDO

Lukenweld Jacketed Drier Rolls

(PATENTS APPLIED FOR)

for more production

"... much more dimensionally stable"



Working surfaces of Lukenweld Jacketed Drier Rolls may be carbon or low-alloy steel, solid stainless steel, Monel or other nonferrous metals or clad steels.

●

Section of a typical Lukenweld Jacketed Drier Roll, showing how steam is guided against the roll face, between inner and outer shells.

A large manufacturer required drying rolls 10′ 0″ O.D., machined to a tolerance of .002 on the diameter and .0015 across the face. He got them from Lukenweld and found them "much more dimensionally stable than cast rolls, with improved heat transfer properties".

Welded steel construction permits a design that meets and maintains the most exacting tolerances—gives you dimensional stability never before possible.

That's not all—Lukenweld Jacketed design makes higher steam pressures and larger diameters economical and practical. Drying rate is stepped up and production increased. At like steam pressures, users report drying efficiency up 18 per cent or more when Lukenweld Jacketed Drier Rolls replaced cast-iron rolls. Write for Bulletin 358. Lukenweld, Inc., Division of Lukens Steel Company, 406 Lukens Building, Coatesville, Pa.

Sizes from 2 feet to 18 feet O. D. and over

LUKENS
LUKENWELD DIVISION

LUKENWELD, Inc.

DRIER ROLLS AND DRYING MACHINERY

EMMONS LOOM STRAPPING

★ SPECIALLY CONSTRUCTED!
★ OIL RESISTANT!
★ STRETCH-PROOF BUCKLE HOLES!
★ OUTLASTS LEATHER MANY TIMES!

Another famous Emmons E-Man Presentation:

Emmons Loom Strapping is manufactured by Emmons to your sample or specifications. B. F. Goodrich Co. supplies the material, especially constructed for the purpose. This material is made up of layers of strong, heavy duck, impregnated with a soft pliable neoprene friction and is very resistant to stretching.

Emmons Loom Strapping is available in any length or width and in two thicknesses, 3-ply—3/16" and 4-ply—1/4". Eyelets, rivets, buckles, etc., can be supplied.

INTERNATIONAL "E" MEN at Your Service

ARGENTINA
STORER & CIA.
Chacabuco 443-49, Buenos Aires

BRAZIL
A. POLAK
216 Av. Beira Mar
Salas 403 a-d, Edificio Magnus,
Rio de Janeiro and Rua Florencia
Abreu 157, Edificio Sao Bento
Salas 510 A. C., Sao Paulo

CHILE
W. L. ROBINSON
Casilla 4075, Santiago

COLOMBIA
C. E. HALABY & CO.
Apartado 139, Medellin

CUBA
J. M. PEREZ PENA
Apartado 1611, Habana

MEXICO
LEO LENK
Ave. Republica Guatemala 4, Mexico, D. F.

VENEZUELA
N. MARVEZ
Apartado 391, Caracas

URUGUAY
STORER & CIA
Paysandu 1202, Montevideo

DOMESTIC "E" MEN at Your Service

LAWRENCE, MASS.
Main Office and Plant
EMMONS LOOM HARNESS CO.
P. O. Box 927
'Phone - 6194

CHARLOTTE
Branch Plant
GEORGE FIELD, Manager
P. O. Box 2036
'Phone - 3-7503

NEW YORK
W. S. TAYLOR
52 Vanderbilt Avenue
'Phone - Lexington 2-6060

ATLANTA
ARTHUR HARRIS
P. O. Box 1982
'Phone - Main 2643

CHICAGO
ALBERT R. BREEN
80 E. Jackson Boulevard
'Phone - Harrison 7140

DALLAS
R. D. HUGHES SALES CO.
1812 Main Street
'Phone - C-6283; C-6284

EMMONS PRODUCTS Serving the Textile Industry

STEEL HEDDLES
HEDDLE FRAMES
COTTON HARNESS
REEDS
SELVAGE HARNESS
MAIL HARNESS
MENDING EYES AND TWINE
SLASHER AND STRIKING COMBS
EMMONS LOOM STRAPPING
(Manufactured by B. F. Goodrich Co.)
RUN-RITE PLASTIC SHEAVES
Manufactured by National Plastics, Inc.
McLANATHAN LEATHER PRODUCTS
Condenser Tapes • Wondertan Stripper Belts • Aprons

EMMONS
WEAVE ROOM EQUIPMENT

The Meaning of

IT IS the characteristic excellence of engineering, manufacture and performance that makes H & B quality unexcelled in modern textile machinery. Here are a few words and three pictures that tell why.

H&B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

Quality at H&B

1

The functional beginning of any efficient machinery is the drawing board. The men at our drawing boards (Fig. 1) are well equipped by talents and experience to plan and design the operation of our machinery for top performance in your mill. Blueprints, drawings and layouts are not approved by the engineering department until every development has been tested. We begin at the beginning, and we begin well.

2

The second step is the manufacture, the physical assembly of the designed machinery. Here again, experience is invaluable in producing precision parts to do a precise job. The combination of craftsmanship and mass production, which distinguishes American industry, is well exemplified by the work in our milling department (Fig. 2). The best materials obtainable are used by the best men available to produce H & B machinery.

3

Finally the machinery is installed and receives the acid test—performance in any individual operating organization. Here, as in the actual installation shown in Fig. 3, H & B machinery proves itself and rewards by superior results the care exercised in engineering and manufacture.

By long established, careful attention to all three stages—engineering, manufacture and performance—we build textile machinery which fully realizes the meaning of quality at H & B.

MACHINE CO.

Textile Machinery

DIVISION PAWTUCKET, RHODE ISLAND, U.S.A.

BRANCH OFFICES
ATLANTA, GA.
615 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

Cotton Rolls
Combination Rolls
Husk Rolls
Paper Rolls
Embossing Rolls
Friction Calenders

Schreiner Calenders
Chasing Calenders
Rolling Calenders
Silk Calenders
Embossing Calenders
Cloth Pilers
Drying Machines

Mangles
Padders
Squeezers
Washers
Winders
Mullen Testers

PERKINS HOLYOKE

B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

Accelerates TWICE AS FAST!

Again UNION SPECIAL LOCKSTITCH MACHINES pace plain sewing efficiency

Faster starts mean less actual production time on any sewing operation — and the new Union Special Lockstitch machine accelerates *twice as fast* as the previous high speed Union Special Lockstitch models!

Again setting the pace for plain sewing machine efficiency, Union Special Lockstitch machines have the light-running, easy operation that keeps operator fatigue at a minimum and helps to get more finished work done per day.

All the Union Special-engineered advantages of earlier Lockstitch machines are continued in the new streamlined models, *plus* the further developments and refinements listed briefly at right. Get full information on the New Union Special Lockstitch from your Union Special Representative — or write direct for Bulletin No. 258.

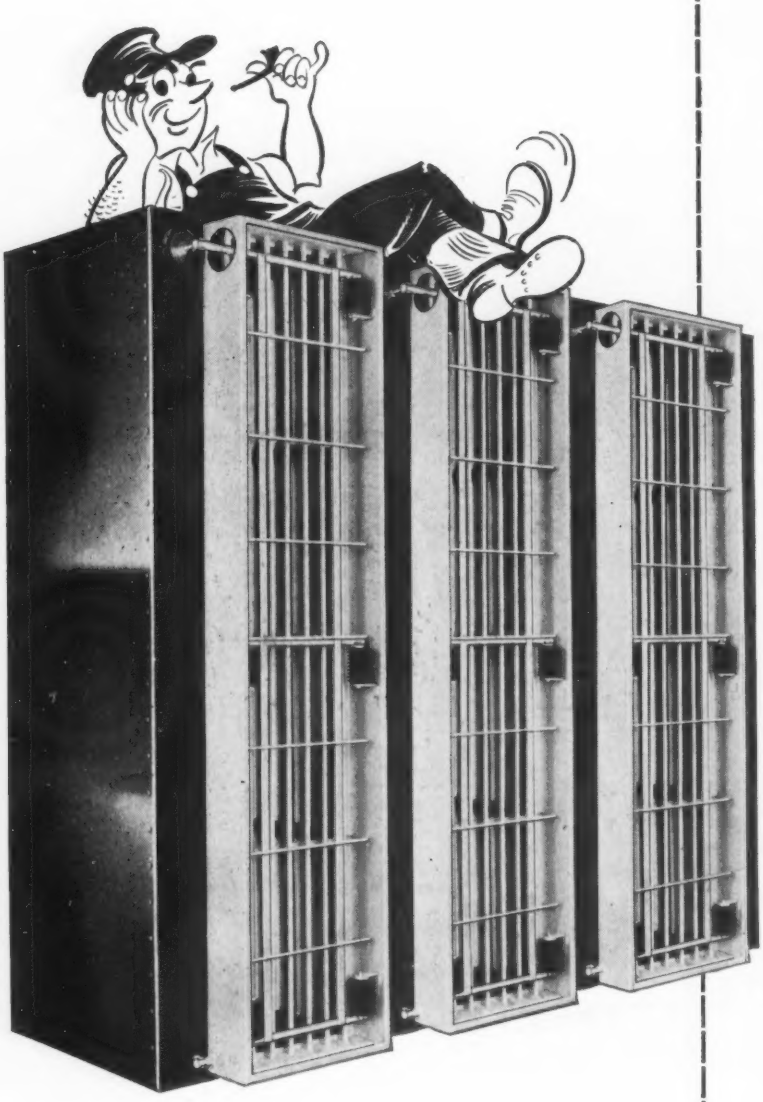
New Union Special Lockstitch Developments

- Dynamic balancing throughout.
- Controlled hook race-way lubrication.
- New lightweight thread take-up and needle bar.
- Needle bearings replace plain journals in thread take-up.
- Simplified oiling, with Lucite oil sight gauges.
- Isolated mounting of machine from table board.

Union Special *Machine Company*

403 N. Franklin St., Chicago 10, Ill.

Maintenance men get a break



and you get a bonus in the Electro-Airmat

EVER clean an air filter? If you have, you will appreciate the maintenance man's enthusiasm for the modern Electro-Airmat.

Here is a dry-type electronic precipitator which uses Airmat paper or glass media as the filtering medium. This exclusive AAF product has thousands of successful installations to its credit in mechanical type filters. Under electrostatic charge its service life is increased 30%. When dirt-laden it is thrown away rather than cleaned, and replaced quickly and economically from a roll of new Airmat. No oil, no muss, time and labor saved and with each reloading you have a brand new filter.

Applying new Airmat paper with mechanical loader

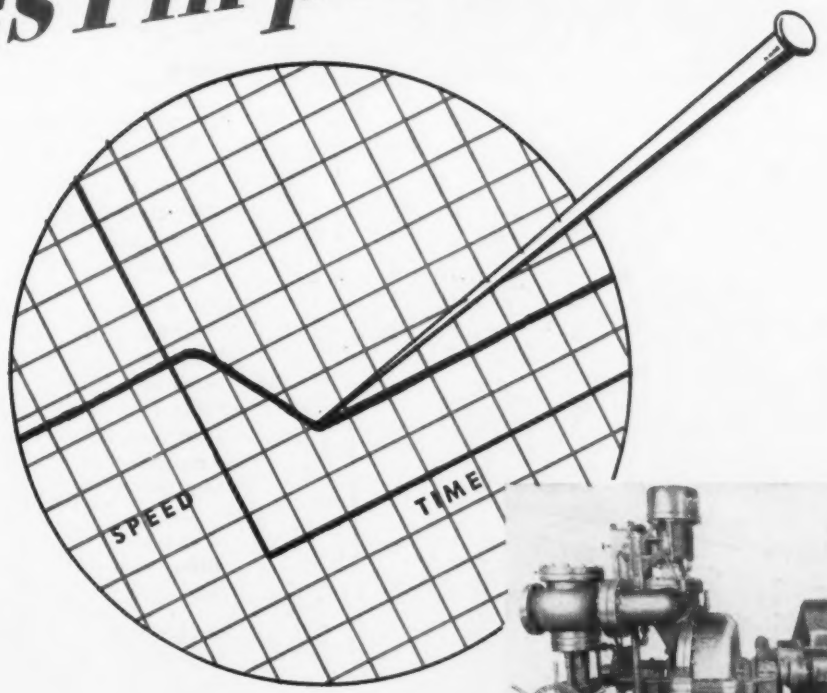
Now, where's your bonus? First, efficiency. Tests show Electro-Airmat to have an average efficiency of 85% to 90% by the Bureau of Standards Discoloration Test Method. Second, economy. Costly water connections, drains and watertight base are eliminated. Third, continuous protection. Electro-Airmat combines the best of electronic and mechanical filtration. Should electronic action become inoperative due to power failure, Airmat paper carries on as a straight mechanical filter.

It's a great combination of features—all exclusive with Electro-Airmat. Catalog No. 253 contains complete information. Write for it today!

AMERICAN AIR FILTER CO., INC.
304 Central Ave. Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

AAF
ELECTRO·AIRMAT
ELECTRONIC PRECIPITATOR

Here's Pin-point Accuracy



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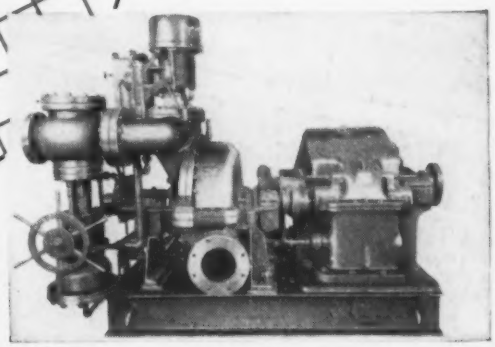


TURBINE DRIVE

HOLDS SPEED WITHIN 1/10 OF 1%

The new electric governor used in the Type DE steam turbine has demonstrated pin-point accuracy far in advance of previous turbine controls. Under constant steam and load conditions, this governor will hold drive speed within 1/10 of one per cent.

Such accuracy in your machine drives can really pay off in greater output and improved quality control.

NO HUNTING

The electric governor changes turbine speed quickly and smoothly. It eliminates hunting or speed fluctuation.

SPEED RANGE 30:1

Accuracy is not limited to a narrow speed range. The drive can be operated over speed ranges as great as 30 to 1. Thus the drive gives versatility to your processing machines—enables them to handle special jobs with ease.

SIMPLE CONTROL

Speed is changed by simple push-button control. Where frequent speed changes are anticipated, "pre-set" control, with separate push buttons for pre-selected speeds, can be provided.

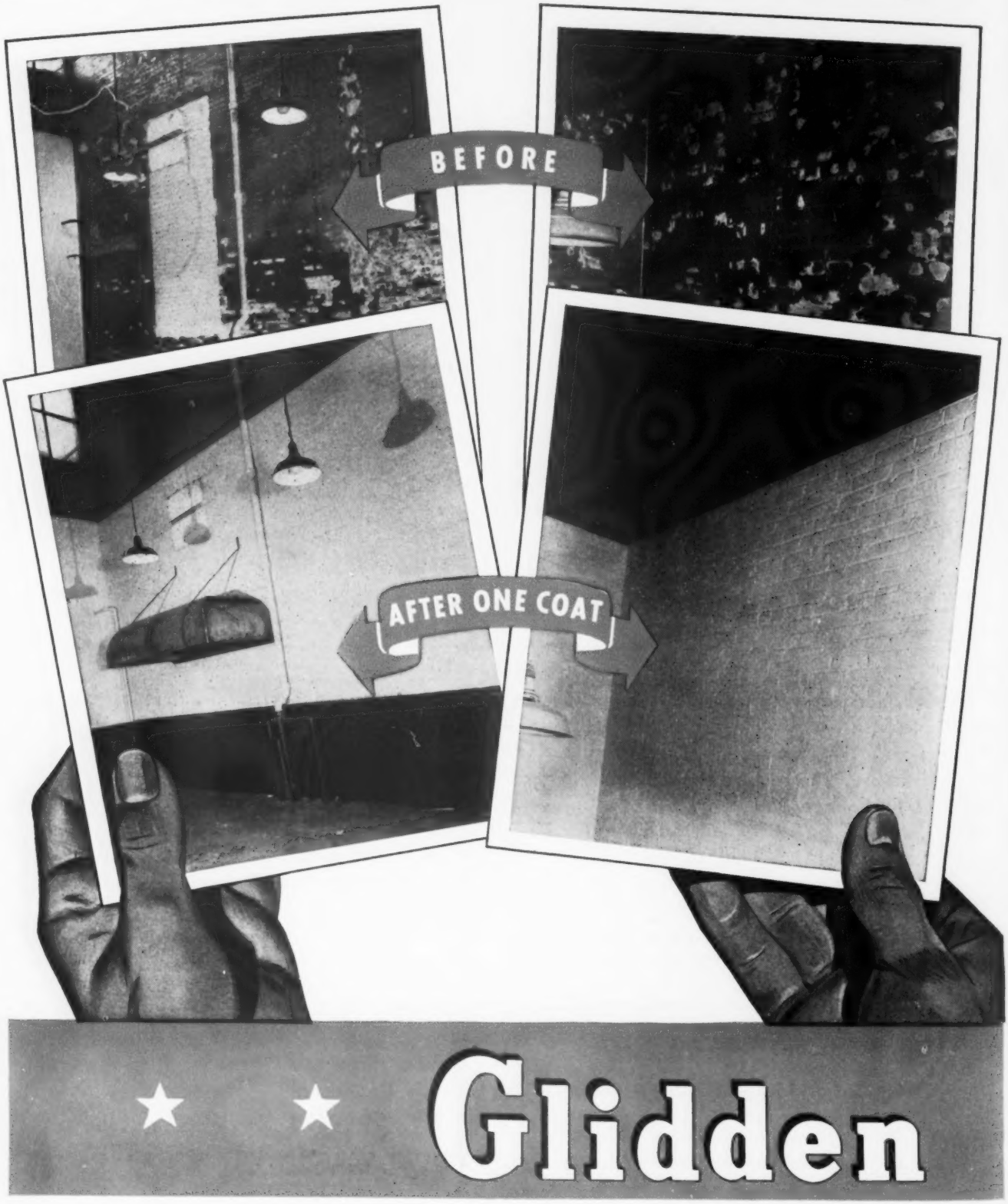
GIVE YOUR OUTPUT A BOOST

Our turbine specialists will be glad to show you how this highly accurate, wide-range drive can step up the output of *your* processing machines. Get in touch with the nearest G-E Apparatus Sales Office, or write Apparatus Department, General Electric Co., Schenectady 5, N. Y.

GENERAL ELECTRIC

252-19

More proof in pictures — *ONE COAT* works wonders when you paint with...



★ ★ Glidden

SPRAY-DAY-LITE

LOOK . . .

6 BIG ADVANTAGES MAKE GLIDDEN SPRAY-DAY-LITE TODAY'S LEADING FINISH FOR TEXTILE PLANT INTERIORS!

1. **SPRAY-DAY-LITE gives conventional two-coat results in only one coat.**
2. **Increases lighting efficiency by giving *maximum* light reflection and diffusion.**
3. **Provides smooth, solid covering over grimy, dirty and badly discolored surfaces of almost any type.**
4. **Its intense white does not yellow with age (also available in 10 attractive colors.)**
5. **Durable, eggshell finish eliminates eye-straining glare —washes like tile.**
6. **Sprayed or brushed, it does not sag or run; produces little fog or mist when sprayed.**

Now there's also

BRUSH-DAY-LITE

All of the established advantages of famous GLIDDEN SPRAY-DAY-LITE are now offered you in BRUSH-DAY-LITE, especially formulated for brush application.

FREE! A Practical Guide to "Sight Perfection" in Plants by Glidden Color Authorities

Tells and shows how to follow scientific, E-Z-C Color Planning in painting interiors and machines to ease eyestrain, boost production, reduce accidents. Send coupon for it today. If you don't find all the guidance you need in this book, the Glidden Color Studio will design color plans tailored to your particular needs—without charge.

HERE'S A COUPON IT WILL PAY YOU TO MAIL *TODAY!*

THE GLIDDEN COMPANY
Dept. T-7, 11001 Madison Ave., Cleveland 2, Ohio

- ☐ You may send your book on the scientific use of color in industrial plants, "Sight Perfection".
- ☐ You may send your SPRAY-DAY-LITE Color Chart showing the 10 attractive shades and suggested color combinations.
- ☐ You may have your representative call and demonstrate SPRAY-DAY-LITE in our premises without obligation on our part.

NAME_____

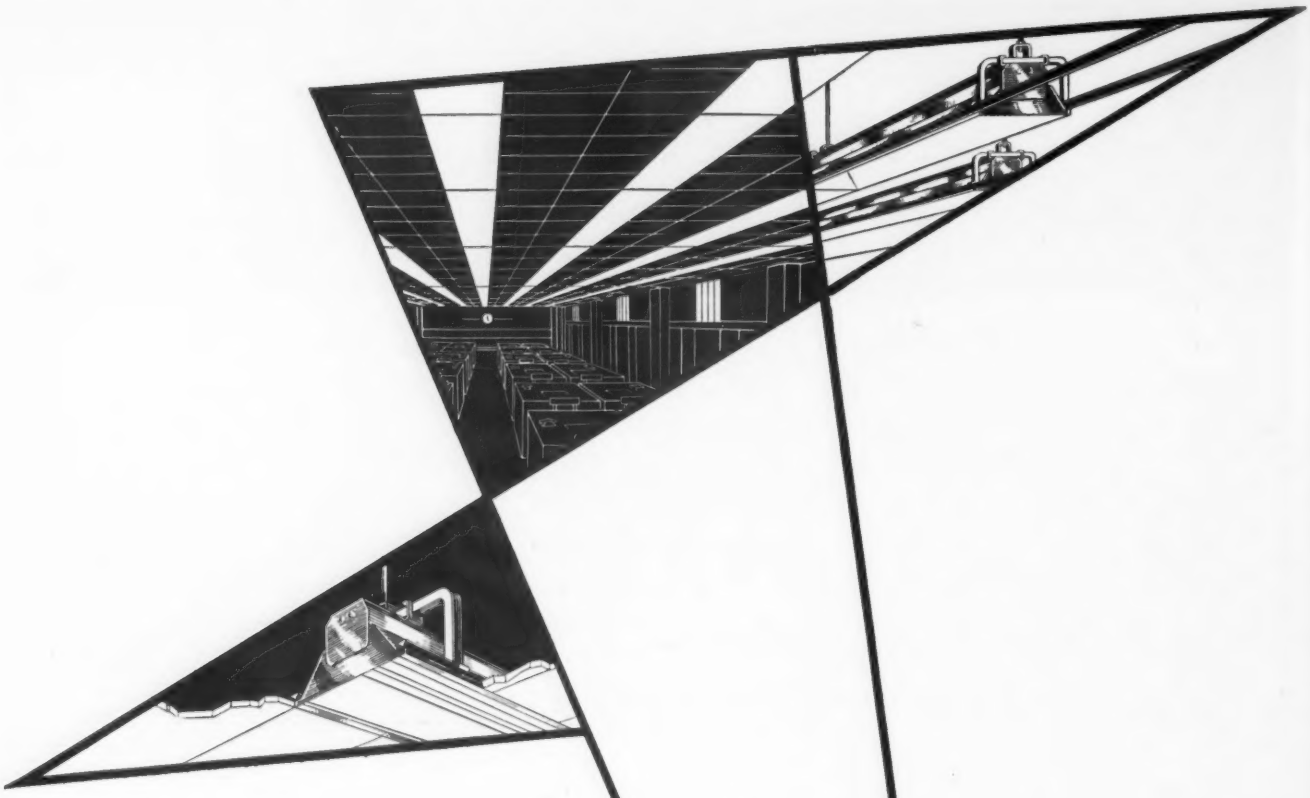
COMPANY _____ TITLE_____

ADDRESS_____

CITY AND STATE_____

TIME-TESTED

Pacemaker in Paints



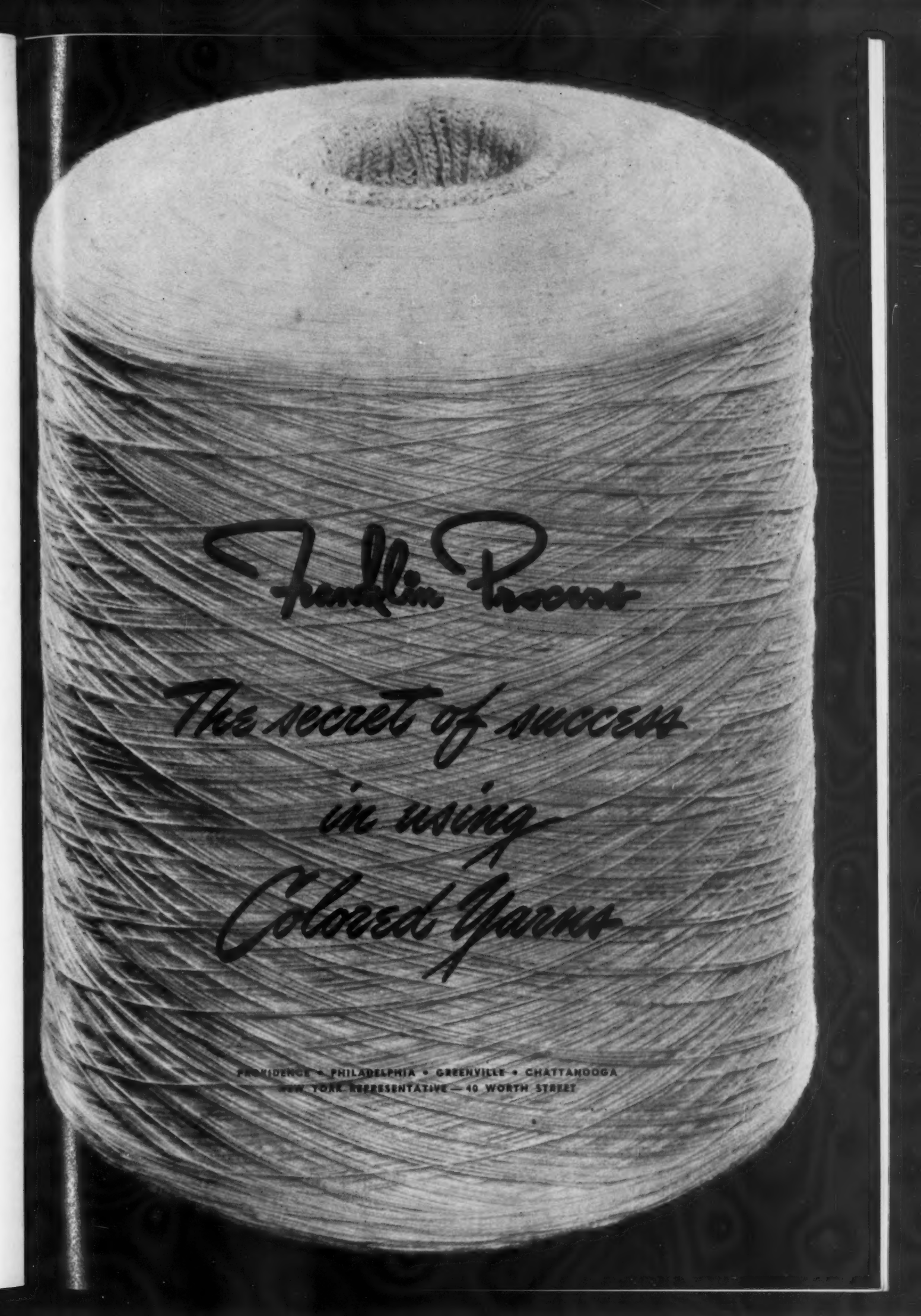
lighting with a new versatility of application . . . ceilings unlimited

You get "good lighting" from MILLER FLUORESCENT TROFFER LIGHTING SYSTEMS — you get, in addition, the opportunity to plan the lighting to form any ceiling pattern desired — CEILINGS UNLIMITED! Interiors of stores, schools, offices, factories, and public buildings are thereby modernized as well as lighted by the use of this one basic lighting system. Installation is simplified. Wiring costs are cut up to 50%, conduit and conduit fitting costs up to 80%. Supports from structural ceiling reduced 50 to 75%.

Miller lighting service, developed over 103 years' pioneering in good lighting, is all-inclusive. Its 50 and 100 FOOT CANDLERS (Continuous Wireway Fluorescent Lighting Systems) have been established as standard for general factory lighting. Miller also makes Incandescent and Mercury reflector equipment for factory and commercial application.

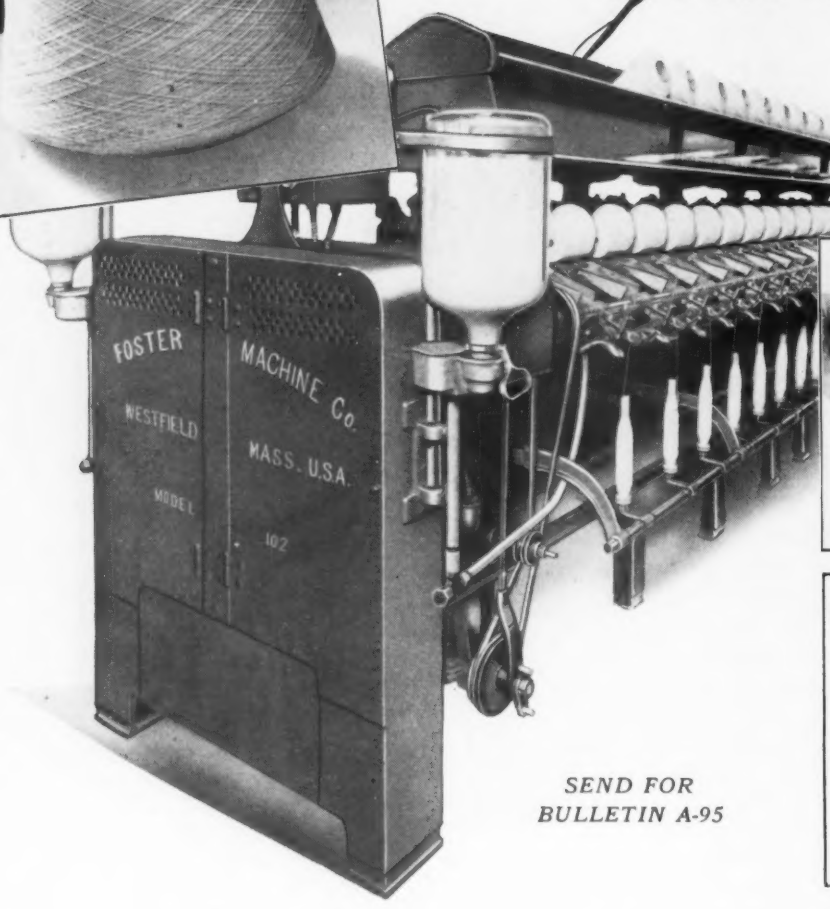
MILLER field engineers and distributors are conveniently located.

THE miller COMPANY
SINCE 1844
ILLUMINATING DIVISION, MERIDEN, CONNECTICUT

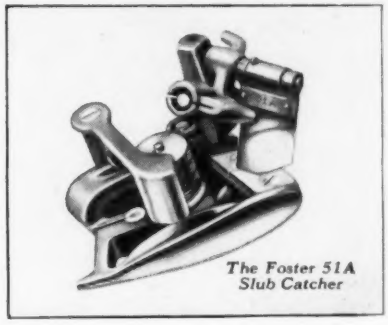

Franklin Process
The secret of success
in using
Colored Yarns
PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA
NEW YORK REPRESENTATIVE — 40 WORTH STREET

WOOL or WORSTED and FOSTER 102

A Combination for Good Winding



Doffing empty bobbin from supply skewer.



The Foster 51A Slub Catcher

SEND FOR BULLETIN A-95

Wool and worsted yarns are wound better on the Foster Model 102. The following Foster features, incorporated in the 102, account for this superiority of performance:

1 *Minimum breakage* because supply and tension bracket are in line and close enough for a single balloon that reduces yarn strain.

2 *Minimum breakage* because supply skewer, which is long enough so that a mule cop will not jump off, always swings back, after loading, to its original setting in exact alignment with tension bracket.

3 *Economy* because of rugged construction that reduces vibration and wear, hardened steel or porcelain parts that minimize cutting and grooving by hard twist yarns, and high speed production (one mill is running 70s worsted at 400 y.p.m.) with reduced operating cost.

4 *Economy* because repair costs run as low as $3.50 per year per 100 spindle machine.

5 *Flexibility* because the 102 winds soft twist or hard twist yarns, any count or type, on warping cones, knitting cones, parallel tubes, dye packages or twister packages, any taper, and any angle of wind from 9° to 18°.

6 *Efficiency* because several types of self threading tension and slub-catching devices promote quick threading and automatic inspection.

7 *Efficiency* because empty bobbin conveyor BELOW bobbin pins eliminates lifting, because conveyor discharges into standard size truck and eliminates rehandling, and because changeovers from cones to tubes or vice versa are comparatively inexpensive—one side can wind tubes and the other cones, if desired.

FOSTER MACHINE CO., Westfield, Mass.

Southern Office: Johnston Bldg., Charlotte, N. C.; Canadian Representative: Ross, Whitehead & Co., Ltd., University Tower Building, 660 Ste. Catherine Street West, Montreal, Quebec

Designers put this project on an Economical Permanent Footing with

KOPPERS

PRESSURE-CREOSOTED PILES

A common problem—providing a firm, *enduring* foundation in unstable soils—faced the designers of this large industrial building. To solve it, they chose a pile material whose permanence and economy have been conclusively demonstrated in thousands of applications—pressure-creosoted wood.

Koppers Pressure-creosoted piles were driven in the wall trench, and under the floor area. These multiple supports eliminate settling hazards. The treatment gives enduring protection against decay, permitting cut-offs above the water table to be safely made. It also fortifies the piles against insect attack.

The *permanence* of pressure-creosoted piles is demonstrated by the old buildings founded on them . . . and present-day *economy and effectiveness* are indicated by the many modern buildings that use this proven method of overcoming soil handicaps. Koppers Pressure-creosoted piles permit economical development of areas where water tables are below pile cut-offs. They provide adequate bearing value in constructing foundations for heavy bridges or machinery. And they are an accepted means of equalizing support when part of the building is over filled or soft ground.

Koppers is equipped to treat piles up to 125 feet in length, and the delivery situation is excellent. If you have a foundation problem, get in touch with Koppers.

Piles in trench will be capped by wall; others by floor slab.

Reinforcing rods for floor slab. Piles can be seen below.

Floor partially poured. Lower reinforcing is covered.

KOPPERS PRESSURE-TREATED WOOD

KOPPERS COMPANY, INC.

PITTSBURGH 19, PENNSYLVANIA

8 years' dyeing service and NO SIGN of CORROSION!

WISCASSETT MILLS COMPANY

The Mark Of WISCASSETT Excellence

Selling Agents
CANNON MILLS, INC.
70 WORTH ST.
NEW YORK, 13

ALBEMARLE, N.C.

April 12, 1946

T. R. SMITH, Mgr.
Yarn Dyeing Dept.

The International Nickel Company, Inc.
67 Wall Street
New York 5, N.Y.

Gentlemen:

Replying to your letter of March 29th, with reference to twin package dyeing machine of Inconel which we have had in operation now for approximately eight years. We beg to advise that this machine has given us excellent service. We have dyed all types of colors on cotton yarns: vats, develops, directs, sulfurs, naphthols, etc., and no corrosion whatever has ever appeared on the metal. The surface of the metal stays bright. Practically no cleaning from one color to another is required, and we are very well pleased and satisfied with the performance of Inconel in this installation.

With kindest regards from the writer, we are

Yours very truly,

WISCASSETT MILLS COMPANY
YARN DYEING DEPARTMENT

By: T. R. Smith

TRS/ab

EIGHT YEARS AGO, Wiscassett Mills Company, Albemarle, N. C., installed a new twin package dyeing machine. They use it with all types of colors for cotton yarns.

In the letter reproduced above, T. R. Smith, manager of Wiscassett's yarn dyeing department, makes several significant comments. He says, for example, that no corrosion "has ever appeared on the metal. The surface . . . stays bright. Practically no cleaning from one color to another is required."

That's easily understandable. For, when the R. D. Cole Manufacturing Co., Newnan, Ga., built this machine for Wiscassett Mills, they used INCONEL*. This rugged, rustless 80 Nickel-14 Chromium alloy is especially well suited for all dyeing processes. It resists strong alkalies, chlorides and reducing acids; it wards off harmful attack by many oxidizing acids.

Although Inconel exceeds structural steel in both strength and toughness, no special techniques are required for its fabrication and welding. The availability of standard mill forms and castings keeps costs down. Where plate thicknesses are to be 3/16" or greater, Inconel-clad steel answers the purpose—and is more economical.

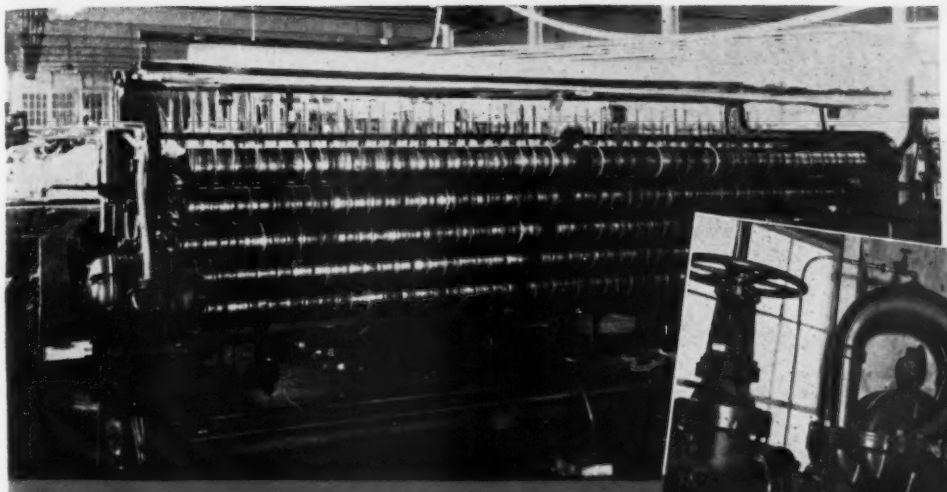
You'll find further information concerning the advantages and uses of this superior metal for textile dyeing equipment in Technical Bulletin T-7, *Engineering Properties of Inconel*. We'll be glad to mail you a copy upon receipt of your request.

EMBLEM OF SERVICE
INCO
TRADE MARK

*Reg. U.S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall Street, New York 5, N. Y.

INCONEL
(80 NICKEL - 14 CHROMIUM)



Century Squirrel Cage 3 horse power motor driving a twiller in a dye works.

Century Squirrel Cage 100 horse power motor driving a fire pump.

Century's

Wide Range of Kinds, Types and Sizes of Electric Motors Meets the Demands of Many Applications in the Textile Industry

Many thousand Century motors are operating fans blowers, pumps, dye house equipment, agitators, centrifugals, washers, dryers, twillers, warpers, stokers and similar equipment in the wide range of operations in the textile industry.

The Century line of electric motors includes:

Polyphase • Single Phase • Direct Current

Vertical • Horizontal • Gear

Open • Splash Proof • Dust Proof

Totally Enclosed Fan Cooled

Totally Enclosed Explosion Proof

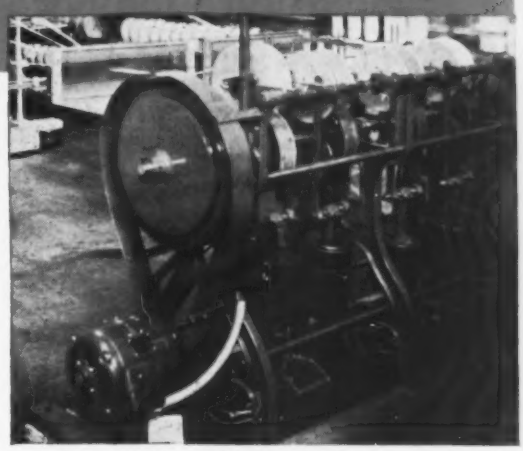
Cushion Mounted • Rigid Mounted • Single Speed

Multi-Speed • Adjustable Speed • Variable Speed

Ball Bearing • Sleeve Bearing

Each type and kind of Century motor is designed to operate in different surrounding conditions indoor or outdoor, from cold and dry to humid tropical climates. Century motors are available for operating processing equipment in highly humid surroundings or in the presence of mild acid or alkali fumes. Special insulation can be provided for more concentrated acid and alkali surroundings.

Specify Century for all your electric power requirements.



Century Squirrel Cage ¾ horse power motor driving a warper in a textile plant.

Century C Motors

CENTURY ELECTRIC COMPANY • 1806 Pine Street, St. Louis 3, Mo.

Offices and Stock Points in Principal Cities

546

You will have to live with YOUR NEW MACHINES For a long time*

***Make sure they are as efficient as they can be made at time of purchase**

WHEN you get ready to discuss specifications consider the bearings. They hold your machines together—determine the hours of accurate life built into the machine.

TAKE THE LOOM FOR EXAMPLE

When you specify HYATT ROLLER BEARINGS for crank, cam, and rocker shafts, vibrating whip rolls, take-up roll, yarn beam and pick shafts you can reliably expect the following advantages:

1. Less than ½ the effort required to turn the loom over by hand.
2. Less fixing—because there is practically no bearing wear.
3. Much less lubrication. Bearings are adequately sealed in housings made by the loom builder.
4. Higher quality cloth is produced.
5. Production is increased.
6. Fire Hazard is reduced.
7. Power is saved.
8. Accuracy of bobbin or shuttle transfer maintained.

Hyatt Roller Bearings have been successfully applied to all types of looms in volume quantities for 30 years. Hundreds of millmen have proved to their own satisfaction that Hyatt Roller Bearings stand up, make a loom run better, are a worth while investment. Be sure to specify "Hyatt Equipped" on your next order. Further information will be gladly furnished if you'll write to HYATT BEARINGS DIVISION, GENERAL MOTORS CORPORATION, HARRISON, N. J.

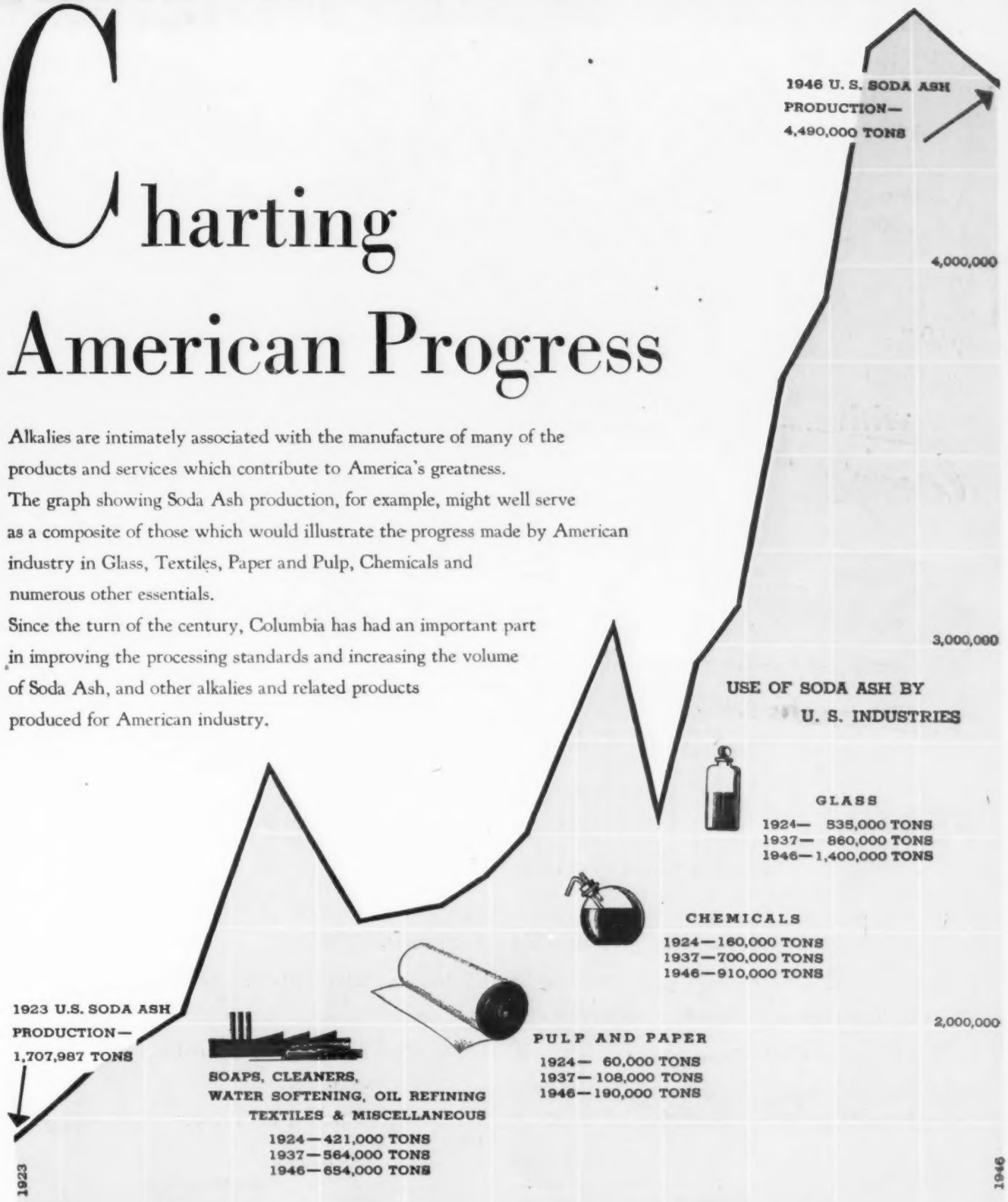
HYATT ROLLER BEARINGS

Charting American Progress

Alkalies are intimately associated with the manufacture of many of the products and services which contribute to America's greatness.

The graph showing Soda Ash production, for example, might well serve as a composite of those which would illustrate the progress made by American industry in Glass, Textiles, Paper and Pulp, Chemicals and numerous other essentials.

Since the turn of the century, Columbia has had an important part in improving the processing standards and increasing the volume of Soda Ash, and other alkalies and related products produced for American industry.



COLUMBIA ESSENTIAL INDUSTRIAL CHEMICALS
Soda Ash • Caustic Soda Liquid Chlorine • Sodium Bicarbonate • Pittchlor and Pittcide (*Calcium Hypochlorites*) Silene EF (*Hydrated Calcium Silicate*) • Calcium Chloride • Soda Briquettes (*Iron Desulphurizer*) • Modified Sodas • Caustic Ash Phosflake (*Bottle Washer*) Calcene T (*Precipitated Calcium Carbonate*)

COLUMBIA CHEMICALS

• PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION

FIFTH AVENUE at BELLEFIELD, PITTSBURGH 13, PENNA. • Chicago • Boston • St. Louis
Pittsburgh • New York • Cincinnati • Cleveland • Philadelphia • Minneapolis • Charlotte • San Francisco

INCREASE PLANT EFFICIENCY

with *longer lasting*

FEDERAL Cold Cathode fluorescent lighting

Here is modern lighting at its best — Federal Cold Cathode fluorescent lighting gives instant starting with amazingly lower maintenance costs.

Federal's precision-built lamps have a low surface brightness that results in a minimum of glare and a maximum of useful illumination.

Federal fluorescent fixtures are designed for simplified installations and are available in a wide range of fixture types for all plant and office requirements.

Federal Cold Cathode fluorescent lighting is unconditionally guaranteed for a full year.*

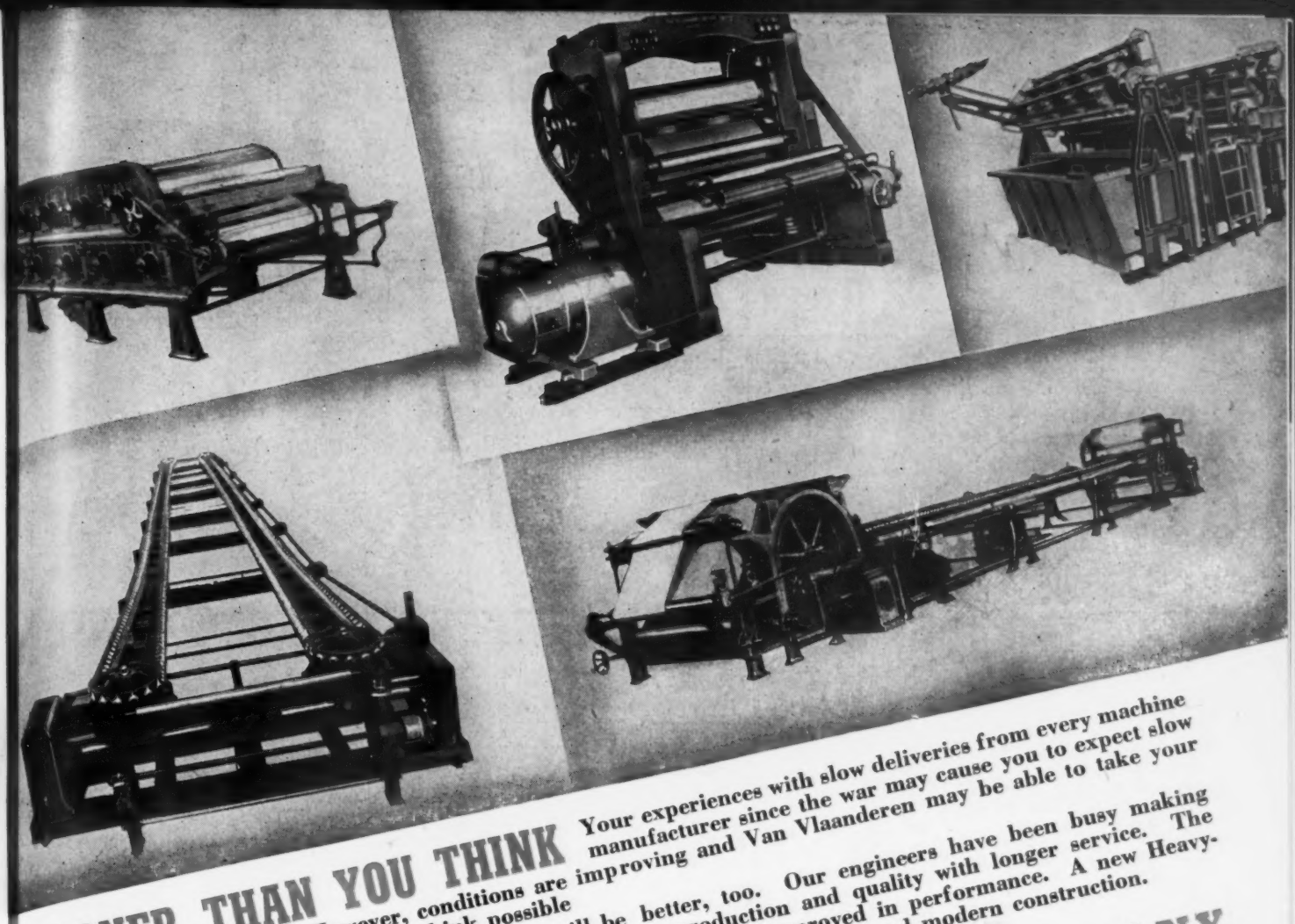
(* except lamp *breakage*)

Write now for information on application of Federal lighting to your needs. Address Lighting Division:

Operating efficiency of Federal lamps is not affected by high humidity.

FEDERAL ELECTRIC COMPANY, Inc.

8700 SOUTH STATE STREET • CHICAGO 19, ILLINOIS



SOONER THAN YOU THINK

Your experiences with slow deliveries from every machine manufacturer since the war may cause you to expect slow deliveries in the future. However, conditions are improving and Van Vlaanderen may be able to take your order for earlier delivery than you think possible

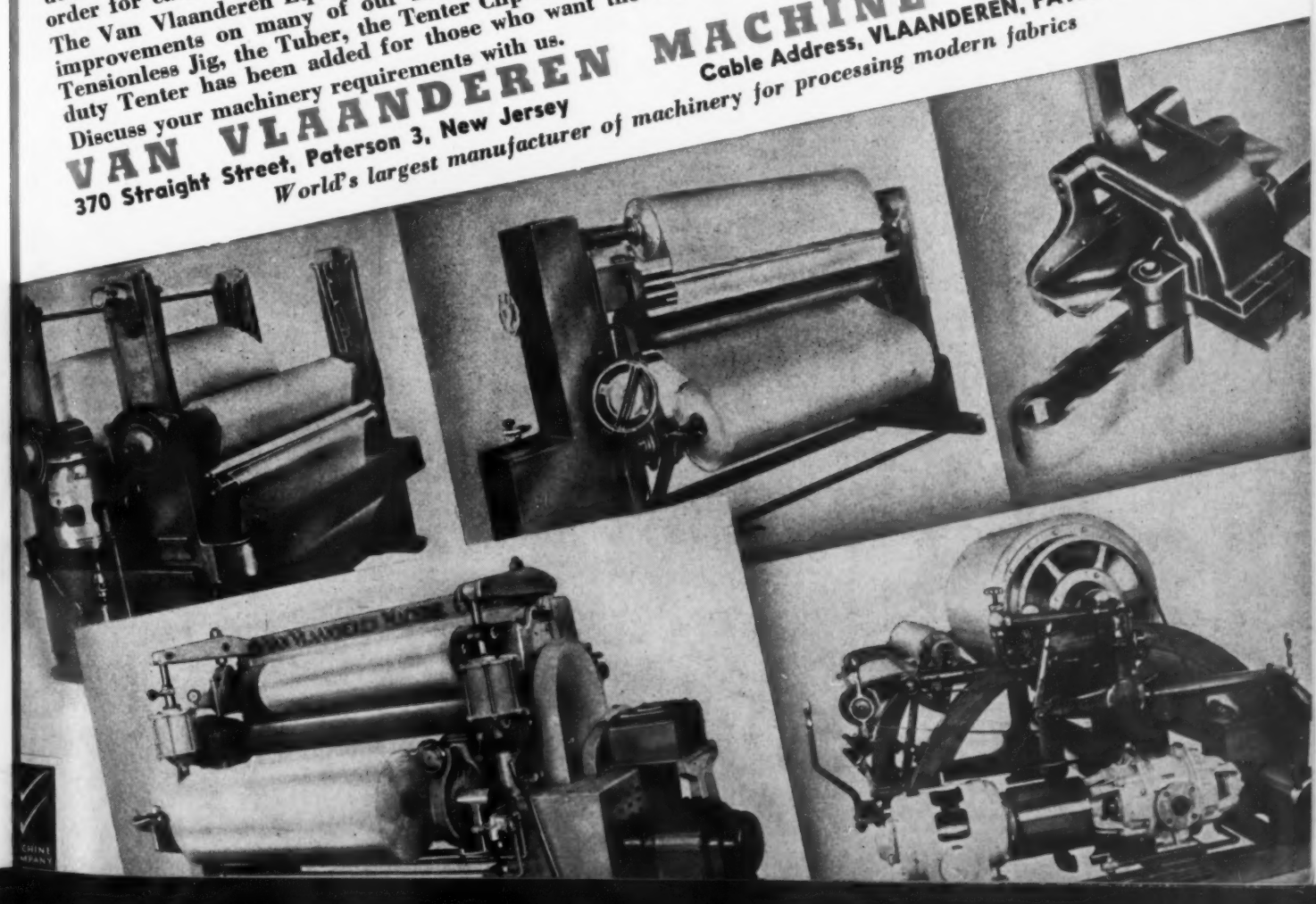
The Van Vlaanderen Equipment you buy now will be better, too. Our engineers have been busy making improvements on many of our machines to give better production and quality with longer service. The Tensionless Jig, the Tuber, the Tenter Clip and others have been improved in performance. A new Heavy-duty Tenter has been added for those who want the last word in capacity and modern construction.

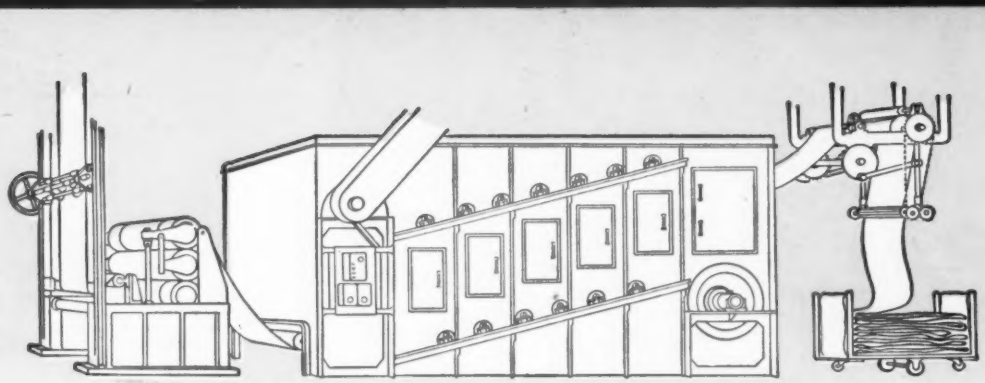
Discuss your machinery requirements with us.

VAN VLAANDEREN MACHINE COMPANY

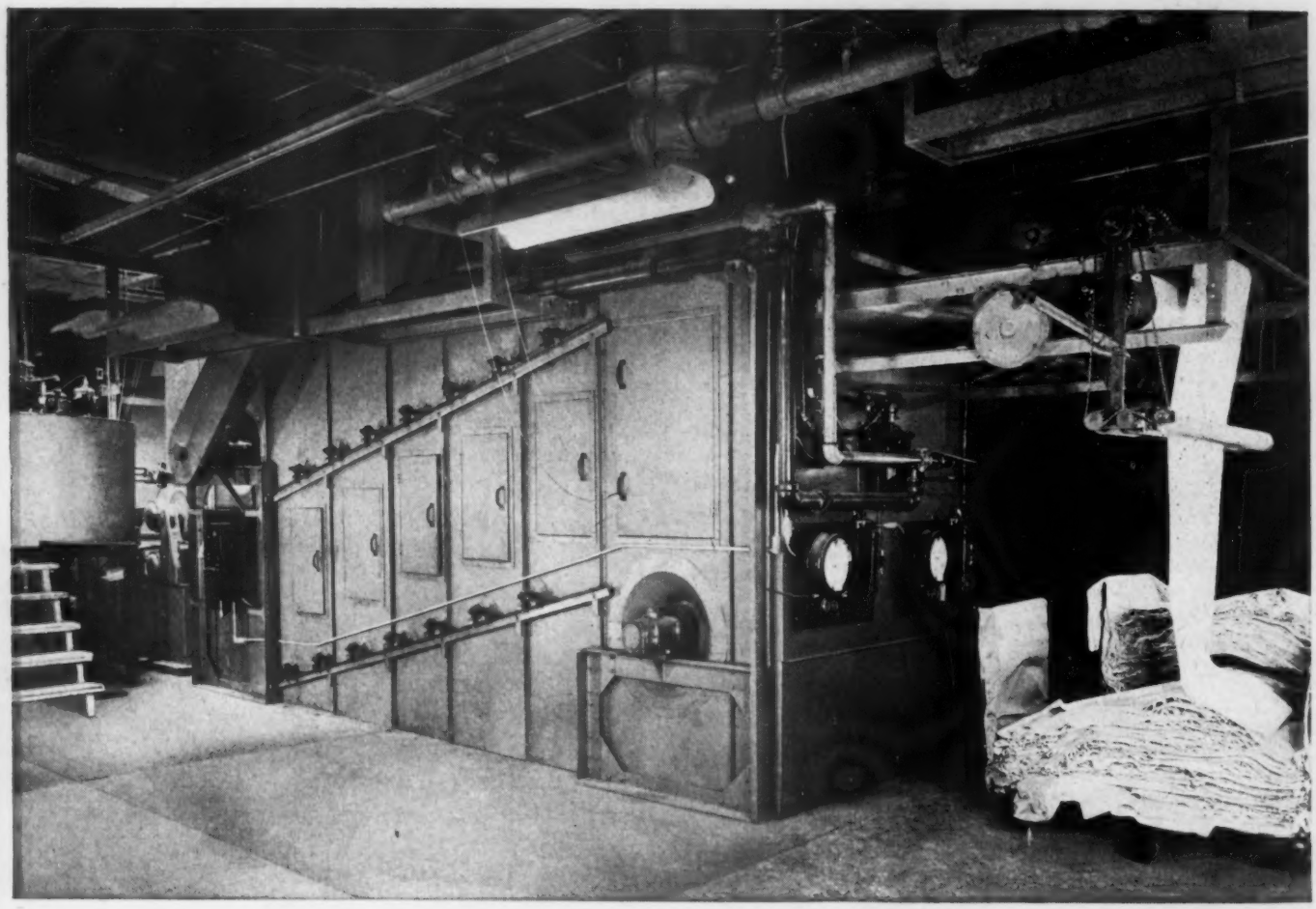
370 Straight Street, Paterson 3, New Jersey — **Cable Address, VLAANDEREN, PATERSONNJ, U.S.A.**

World's largest manufacturer of machinery for processing modern fabrics

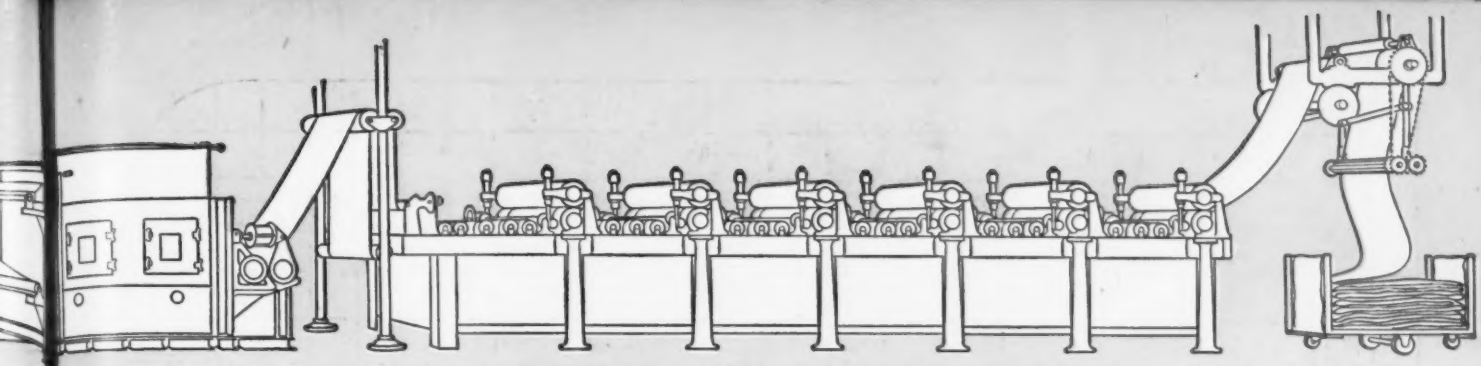




In the first section of the Butterworth Vat Dyeing Range, goods enter a 3-roll padder in which the color is applied in pigment form, followed by drying on a special type air-dryer and folding onto a hand truck.



Delivery end of Butterworth 2-roll pad and impinge dryer in Vat Dyeing Range. Accurate control of the air velocity and temperature in the impinge dryer eliminates any possibility of migration. Goods are dried to within 15-20% of the moisture content.



In the second section of the Butterworth Vat Dyeing Range, goods are impregnated with chemicals on a 3-roll padder and then enter a steamer. (Note choice of cloth entrance—at top for straight steam process or at bottom through a liquid seal for steam and liquid booster processes.) After steaming, goods pass through a water seal and squeeze rolls, and are washed in a 6-box washer, followed by folding onto hand truck.

FINER, FASTER COLORS AT LOWER COST TO YOU

A full range of vat colors, from pastel to very deep shades, can be applied continuously on the Butterworth Vat Dyeing Range. Improved appearance, greater color yield, fastness to crocking, washing and bleaching, as well as fastness to light are imparted to a wide variety of fabrics in either long or short yardages.

There are substantial savings, up to 25% in the cost of color application. Exhaustion problems are overcome. Seconds due to shade variations and specking are eliminated. Close shade control is obtained even in short runs. Liquid boosters can be added to meet specific mill conditions.

The Butterworth Continuous Vat Dyeing Range is designed to allow easy access for threading. Tensions are adjustable for various fabrics. Non-oxidizing metal is used exclusively in the construction.

The Butterworth Continuous Vat Dyeing Range operates at speeds up to 120 yards per minute for increased production. The controlled action of liberated "live" steam permits these speeds without effecting the chemical stability of the leuco.

Investigate the Butterworth Continuous Vat Dyeing Range. Write or call for detailed information.

Butterworth

H. W. BUTTERWORTH & SONS COMPANY, Philadelphia 25, Pa.

TEXTILE FINISHING MACHINERY COMPANY DIVISION, Providence, R. I. - 1211 Johnston Bldg., Charlotte, N.C. W. J. Westaway Co., Hamilton, Ont. - ARGENTINA: Storer & Cia., Buenos Aires - AUSTRALIA: Noel P. Hunt & Co., Ltd., Melbourne - BELGIAN CONGO: Paul Pflieger & Co. - BOLIVIA: Schneiter & Cia., Ltda., La Paz BRAZIL: Cia. Industria e Commercio, Glossop, Sao Paulo e Rio de Janeiro - CHILE: Schneiter & Cia., Ltda., Santiago. COLOMBIA: C. E. Halaby & Co., Medellin - CUBA: Thos. F. Turrull, Havana - ECUADOR: Richard O. Custer, S. A. Quito - FRANCE: Georges Campin, Le Perreux, Seine; Rene Campin, Sceaux, Seine - MEXICO: I. Slobotzky, Mexico, D. F. - MIDDLE EAST: Arlind Corporation - NORWAY: Dr. Ing. Otto Falkenberg, Oslo - PERU: Custer & Thommen, Lima - SOUTH AFRICA: Texmaco, Johannesburg - SWEDEN: Elof Hansson, Goteborg - URUGUAY: Storer & Cia., Ltda., Montevideo - VENEZUELA: Herbert Zander & Co., Caracas.

Engineered for long-term service

★ ★ ★ ★ ★

Scales by FAIRBANKS-MORSE

Combine skilled workmanship, materials chosen by rigid quality standards, and 117 years of scale-building experience, and you have the reasons for the year-in, year-out precision of every Fairbanks-Morse Scale.

Users in every industrial field know of the endurance of these trusted weighing instruments . . . how they serve dependably even under severe conditions and sustained heavy-duty use.

You, too, will find lasting satisfaction in them—wherever you have a use for scales.

Fairbanks, Morse & Co., Chicago 5, Illinois.

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Diesel Locomotives
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Generators • Motors
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Get High - Speed Production From Your Old Looms

When labor costs are at an all-time high—and when retailers and the buying public are clamoring for lower prices, what is the answer? Patented Hunt Spreaders offer one solution—modernize looms and speed up cloth production in the weave room at little more than maintenance cost. Looms take on new life and added years of high speed operation when Hunt Spreaders are added.

Want prompt action? Telephone and tell us how many looms *YOU* want modernized. We'll give you facts and figures—and our crews of skilled erecters work much faster than you'd think. With the low cost of a Hunt Spreader installation, give yourself NEW LOOM PRODUCTION!

Your copy of our new catalog is ready. Write today, and it will come to you by return mail.

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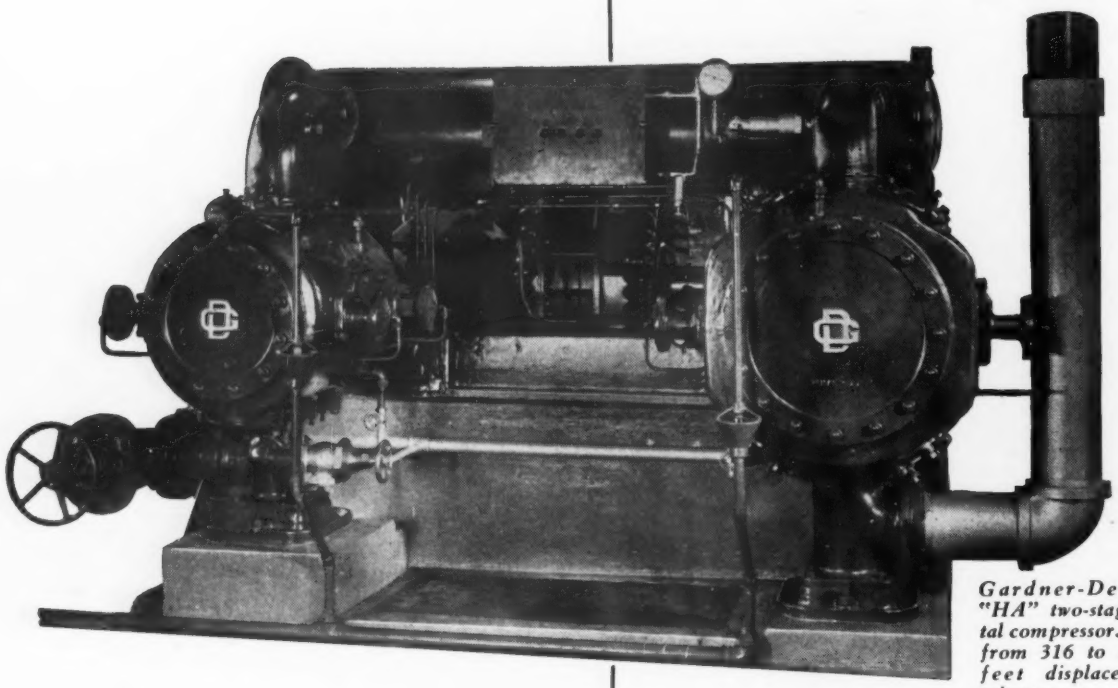
200 ACADEMY STREET TELEPHONE 200 GREENVILLE, SOUTH CAROLINA

"to what do you attribute YOUR LONG LIFE?"



Gardner-Denver Class "HA" two-stage horizontal compressor. Capacities from 316 to 2012 cubic feet displacement per minute.

WHY do Gardner-Denver "HA" Horizontal Compressors last so long — maintaining their high efficiency after years of service? One reason is that in these compressors, shaft friction and wear have practically been eliminated. Timken roller main bearings provide permanent rigidity with freedom from bearing vibration, pounding and side thrust. Bearings will run indefinitely without adjustment, but when take-up is necessary, they may easily be adjusted with assurance that the main shaft will be in line. Here are other reasons why you'll want a Gardner-Denver "HA" in your plant—

- ✳ *Duo-Plate cushioned valves for high delivery capacity — high compression efficiency and lowest power consumption.*
- ✳ *Air cylinders designed for highest volumetric efficiency and lowest horsepower requirements.*
- ✳ *Large water jacket areas for cooler running . . . lower discharge temperatures and lubricating economy.*
- ✳ *Heavy-duty massive main frames, heavily ribbed and reinforced for maximum strength and rigidity.*
- ✳ *Five-step capacity control regulates air output to suit your air needs.*

For complete information, write
Gardner-Denver Company, Quincy, Illinois.

GARDNER-DENVER

SINCE 1859

Atlanta, Ga. Birmingham, Ala. Boston, Mass.
Hazleton, Pa. Knoxville, Tenn. Washington, D. C.
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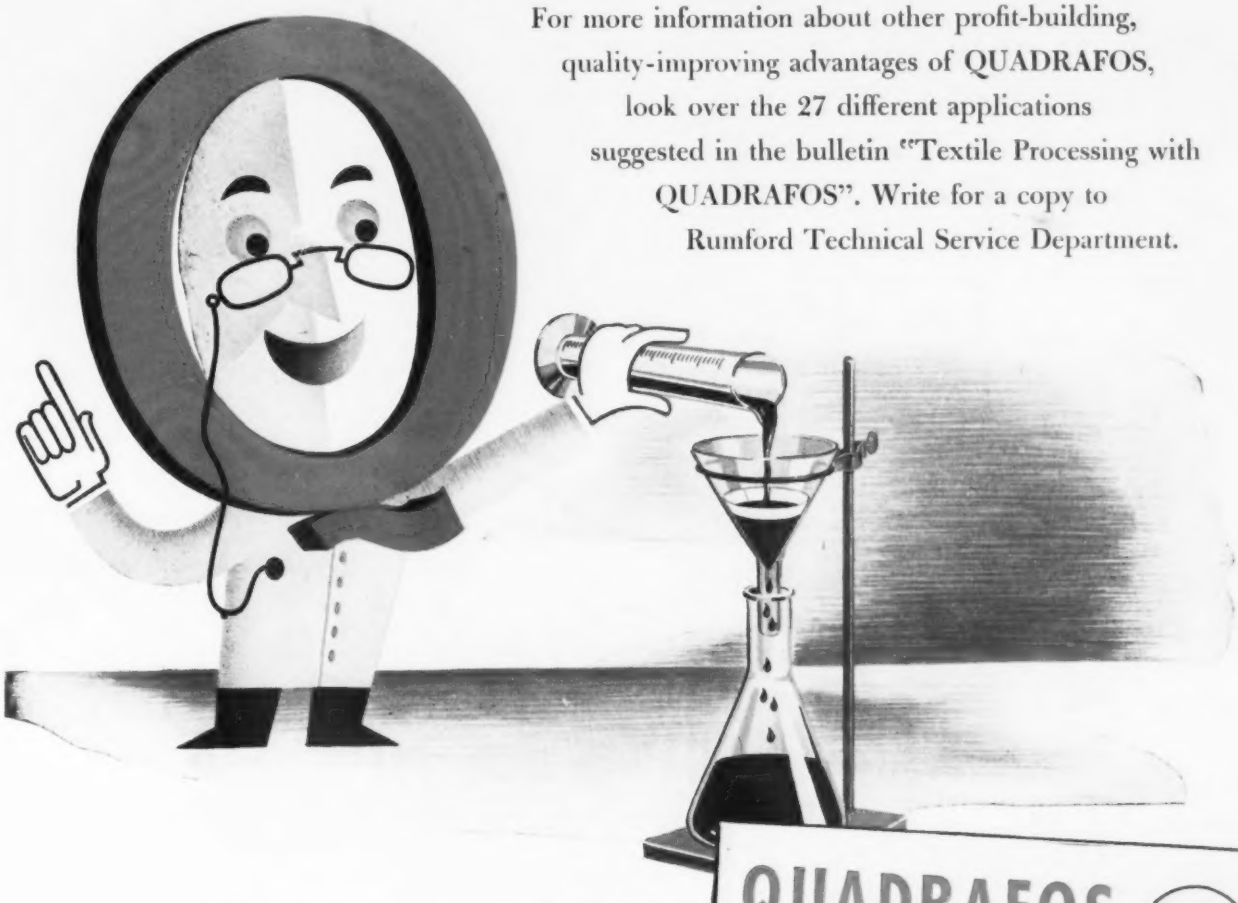
One-Way Ticket

How QUADRAFOS* Steps Up Soil Removal

Embedded soil and grime are quickly broken down and floated away in the scour when QUADRAFOS puts them on a one-way ticket that prevents them from being carried along to the next operation . . . You can readily discover why QUADRAFOS maintains perfect control over these undesirable "passengers". Add a little manganese dioxide to a graduate containing a dilute solution of QUADRAFOS. You'll wait hours for it to settle out because the action of QUADRAFOS keeps it in suspension. Then filter the solution. The significant fact is that the suspended matter rides right through the filter along with the water . . . This ability to break up soil into small particles and keep them from being redeposited is one of the ways QUADRAFOS steps up soil removal . . . turns out goods in better condition for subsequent operations.

For more information about other profit-building, quality-improving advantages of QUADRAFOS, look over the 27 different applications suggested in the bulletin "Textile Processing with QUADRAFOS". Write for a copy to Rumford Technical Service Department.



softens water without precipitation...deflocculates ...redissolves precipitates...promotes free rinsing

QUADRAFOS

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for Sodium Tetraphosphate made by Rumford

RUMFORD CHEMICAL WORKS
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Research at work

TO BRING YOU MORE

A Westinghouse Research Engineer studies the results of design changes for improved bearing lubrication. Constant fundamental research and experimental activities such as these, combined with the work of specialized engineers, account for the many Westinghouse contributions to the Textile Industry.

HOW WESTINGHOUSE RESEARCH BENEFITS THE TEXTILE INDUSTRY

Westinghouse research has made many contributions to the Textile Industry. These developments are the natural outgrowth of a *working* partnership, formed at the time of the early beginnings of mill electrification.

More than 50 years of Westinghouse textile experience is behind each development. From the new multi-motor slasher drive to *Precipitron, the electronic air cleaner—Westinghouse offers related equipment to step up production through better and healthier working conditions . . . uniform quality . . . with lower maintenance per dollar invested.

You'll be assured of *practical* and *economical* answers to your textile problem by calling your nearest Westinghouse office . . . or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-94756

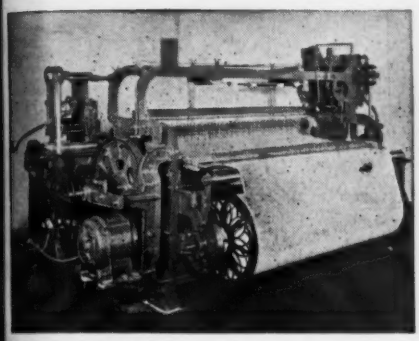
*Reg. Trade-Mark

PRODUCTIVE POWER

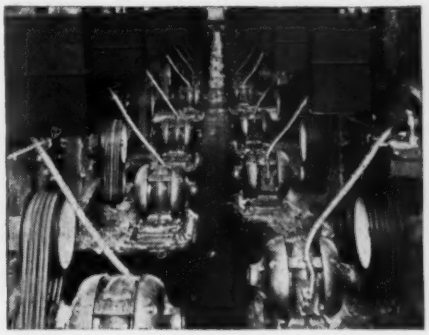
WESTINGHOUSE RESEARCH HAS ONE GOAL: TO HELP YOU PRODUCE FASTER, CHEAPER, BETTER, ELECTRICALLY

New ideas, new processes, new material for making electrical power more productive, flow steadily from the famous Westinghouse Research Laboratories. Many of these developments are at work now in *your* industry...developments—in electricity, in electronics, in processing—which promise many new advancements to help you produce *faster, cheaper, better,* electrically.

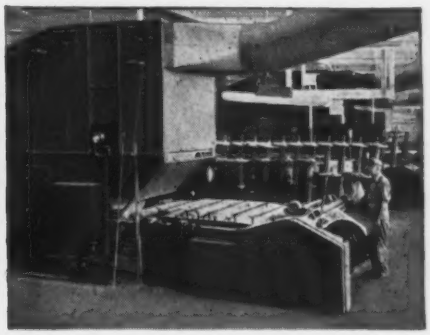
This broad basic research is an important added value to consider when you buy electrical equipment. A complete, separate Westinghouse Textile Industry Department, staffed by engineers intimately acquainted with Textile Industry problems, assures the prompt and *practical* application of new Westinghouse research developments to your special production techniques. Here are 6 Westinghouse contributions to the Textile Industry:



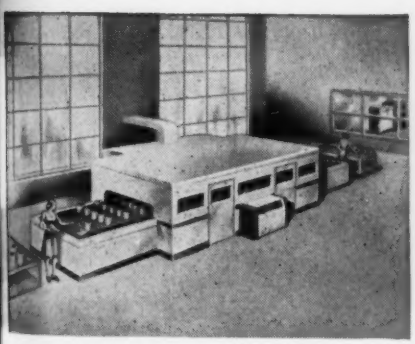
LOOM MOTORS—Quiet, cool, smooth-running motors that cut down radiation heating of your weave rooms—especially designed for peak output. This 1½ hp loom motor drives a modern woolen and worsted loom.



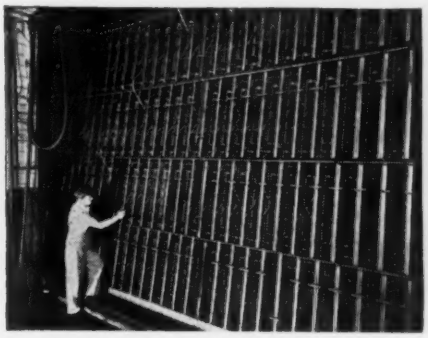
LINT-FREE MOTORS—"The cleanest running motor for textile service"—keeps its insides free of lint because it has *smooth* contours in the path of air circulation. These Westinghouse Lint-Free Motors drive spinning frames at high speed.



MULTI-MOTOR SLASHER DRIVE—The first major improvement in slasher drives for several decades. Rototrol is built into the system to guarantee uniform tension control . . . provides uniform yarn tension—diameter—beam density—better filler yarn spacing, less breakage, more warp on beam.



RADIO-FREQUENCY HEATING—Cuts twist setting and drying time, cake drying and dye package drying to a fraction of that required by conventional methods. Shown is a typical rayon dryer. Note control station at front of dryer.



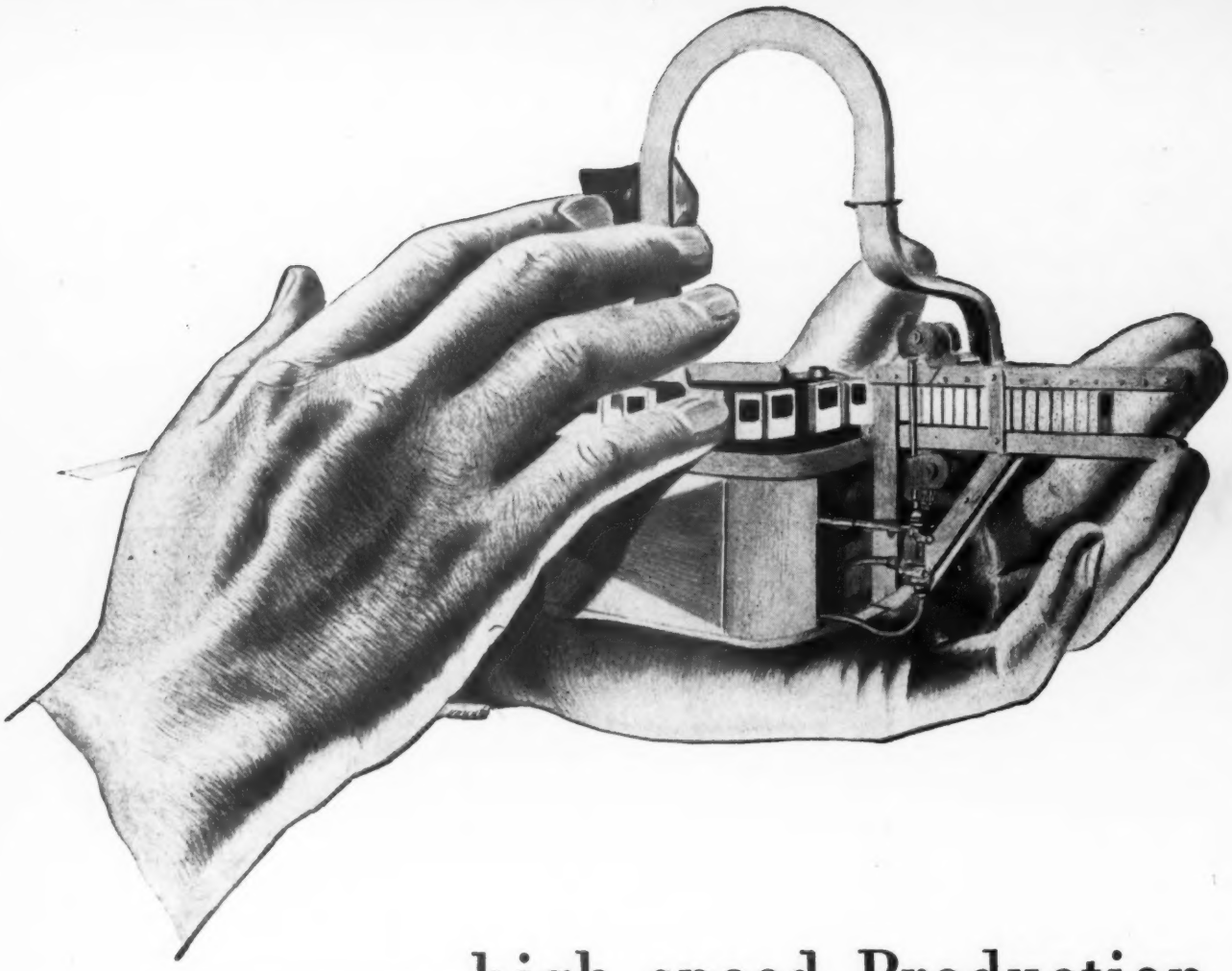
PRECIPITRON—Keeps air clean and healthy—no "mill room fever"—picks out air-borne particles as small as 1/250,000 inch—eliminates dust, lint, soot, fumes, oil mist and smoke from the spinning, winding, weaving and drying operations—increases top-grade production.

LIGHTING—Modern fluorescent lighting provides maximum "see-ability" in this textile mill. Westinghouse "planned lighting" is added proof of the value of single-source responsibility.

Westinghouse

PLANTS IN 25 CITIES... OFFICES EVERYWHERE

MORE PRODUCTIVE POWER FOR INDUSTRY



——high speed Production

Well in Hand!

GAIRanteed folding cartons are endowed with a recognized two-fold LEADERSHIP . . .

LEADERSHIP for outstanding performance on high speed production lines.

LEADERSHIP for winning commanding attention of buyers in highly competitive retail markets.

Precision and design problems entrusted to GAIR are always "WELL IN HAND".

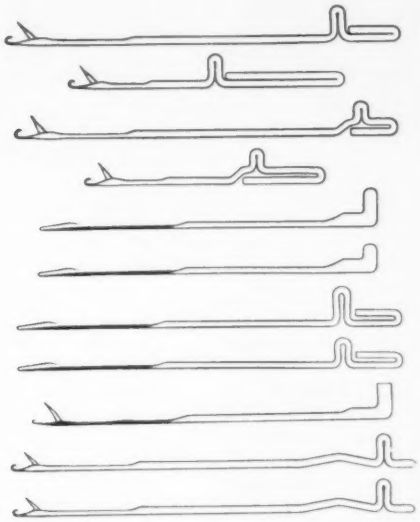
Write for informative booklet on PRECISION PACKAGING

ROBERT GAIR COMPANY, INC., NEW YORK, TORONTO • PAPERBOARD FOLDING CARTONS, SHIPPING CONTAINERS

know your NEEDLES
FOR WOMEN'S UNDERWEAR

UNDERTHINGS OF SOFT, delicate fabrics which a bride might choose and the heavy underwear for the winter sports enthusiast vary widely in design features. And the Torrington Needles used in knitting them also vary widely in design.

But every one of these needles—and every one of the more than 10,000 needles in the complete Torrington line — has the *same* machine-made, machine-tested quality, the same strength, temper and uniformity that produce flawless knitting. So specify TORRINGTONS—and be safe.

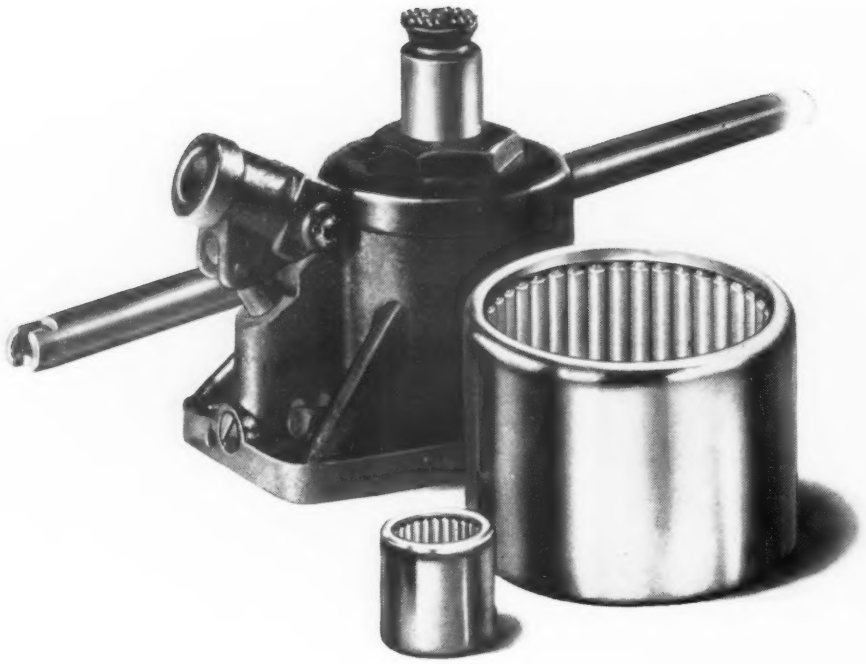


THE TORRINGTON COMPANY

Torrington, Conn., U. S. A. • Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. Boston • St. Louis • Toronto, Canada • *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Avenue, Los Angeles 37, Calif.

There's a
TORRINGTON LATCH NEEDLE
for every type of Knitting!



It needn't be big . . .

a small hydraulic jack can lift a whale of a load. With anti-friction bearings, too, size is no rigid measure of capacity. For Torrington Needle Bearings, the most compact ever devised, are able

To carry heavier loads . . .

in proportion to their size than any other anti-friction bearing. Behind the advantages of small size and high capacity lies the principle of Needle Bearing construction . . . a full complement of small diameter precision rollers providing maximum area of bearing contact surface.

If your problem is handling heavy radial loads in minimum space, let our engineering staff help you apply Needle Bearings in your product.

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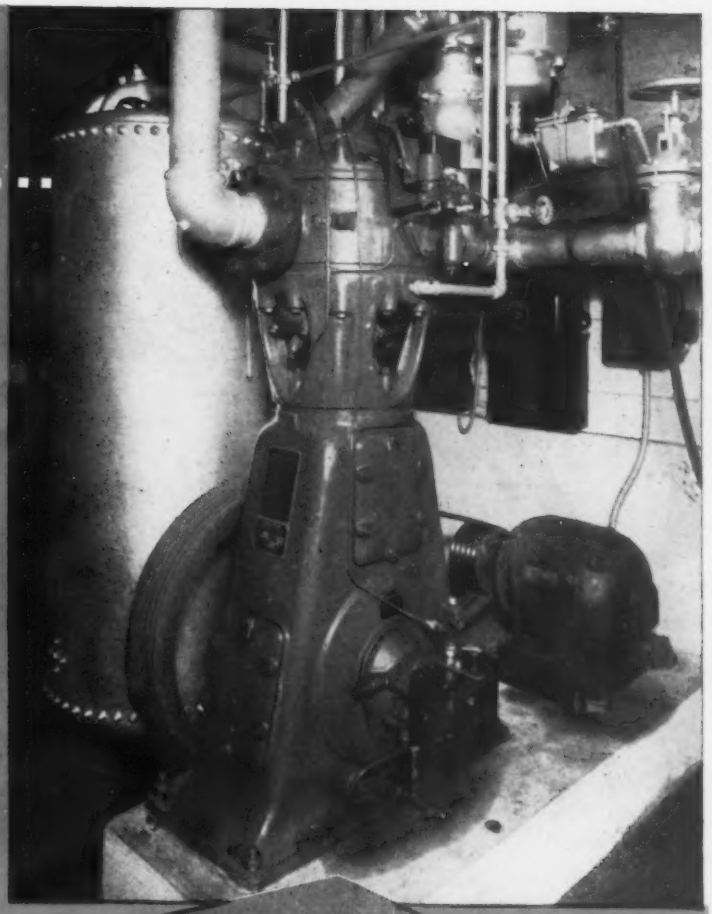
HIGHLY COMPACT....
ECONOMICAL
HEAVY DUTY
AIR
COMPRESSORS
that give long trouble-free service



SULLIVAN WG-9

"Always Dependable"
AIR COMPRESSORS
1/4 TO 600 HORSEPOWER

11 SIZES—153 TO 822 C.F.M.
30 TO 150 P.S.I.

SIMPLE BLOCK-TYPE FOUNDATION.
FULL FORCE-FEED LUBRICATION.
ANTI-FRICTION MAIN BEARINGS.
LONG-LIFE "DUAL CUSHION" VALVES.
CYLINDER LINERS REPLACEABLE ON THE JOB.

Consult a Joy Engineer

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(Turbine Oil Oxidation Test)

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Sinclair is ever alert to the importance of knowing exactly how oils will resist oxidation which can form gums and sludge detrimental to equipment performance.

No satisfactory, quick, short time oxidation test methods have yet been developed. Sinclair Research does not compromise. Some studies require continuous tests of 1000 hours. Others, performed with the apparatus above, are run for 100 hours or more.

This test — to assure consumers that breakdown and resultant costly repairs due to oxidation will be at a minimum — constitutes one safeguard against inferior product performance . . . just as all Sinclair Research is your assurance that every Sinclair Industrial Lubricant is the very highest in quality.

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LILY WHITE OILS

In grades to suit all spindle speeds, loads and operating conditions

Light color, long life

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Lubricants for Industry

FINEST CRUDES + EXPERT RESEARCH and MANUFACTURING CONTROL = OUTSTANDING PERFORMANCE

PULL DOWN YOUR MATERIALS HANDLING COSTS with a HYSTER "20"

Moves and stacks anything up to 2000 lbs. Pulls down handling costs as much as 20% to 79% (actual case histories). Six other Hyster models, 4000 to 30,000 pound capacities, all gasoline powered, all on pneumatic tires.

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YUKON TERRITORY—Northern Commercial Company

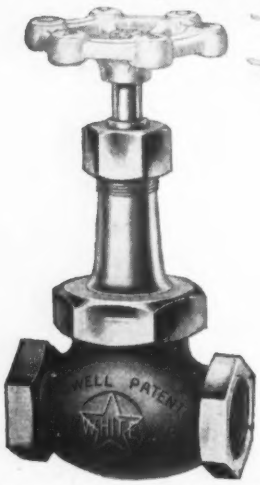
THOUSANDS IN USE

Ideal for work in narrow aisled factories, warehouses and in box cars. The 1-ton capacity Hyster "20" is only 37 inches wide.

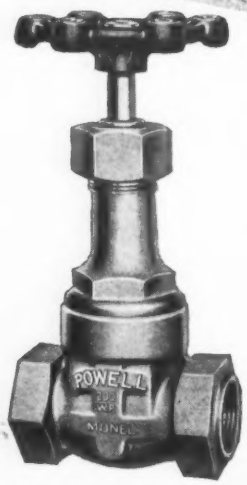
They may look alike, but...
one is a winner..another an "also-ran"

Call it "heart", "staying power", or what you will, some thoroughbreds have what it takes to win.

Now let's consider valves!



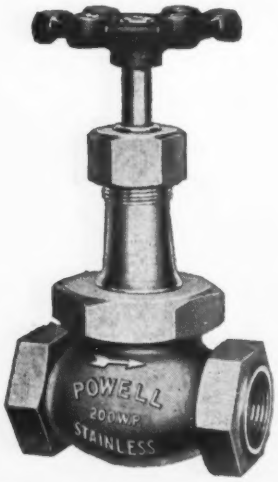
200-pound Bronze Globe Valve. Screwed ends, union bonnet, renewable, specially heat treated stainless steel seat and regrindable, renewable, wear resisting "Powellium" nickel-bronze disc.



Monel Metal* Gate Valve. 200 pounds W. P. Has screwed ends, screwed-in bonnet and inside screw rising stem.

Compare the outward appearance of any Powell valve with that of other valves of the same type and size. You'll probably see very little difference. *It's the things you don't see that give Powell valves the "staying power" that makes them winners.*

There's nothing mysterious about these things. They're merely the result of the continual progress in design, knowledge of materials, and quality of workmanship that comes from more than a century of making valves—and valves only—for American industry.



200-pound Stainless Steel Globe Valve with screwed ends and union bonnet.

Pure Nickel O. S. & Y. "Y" Valve. 150 pounds W. P. Has flanged ends and bolted flanged bonnet.

For the last 25 years, to meet the ever-growing demands of the Chemical and Process Industries, Powell has been building a complete line of Corrosion-Resistant Valves in many special designs and the widest range of pure metals and alloys ever used in making valves.

The Wm. Powell Company
Cincinnati 22, Ohio

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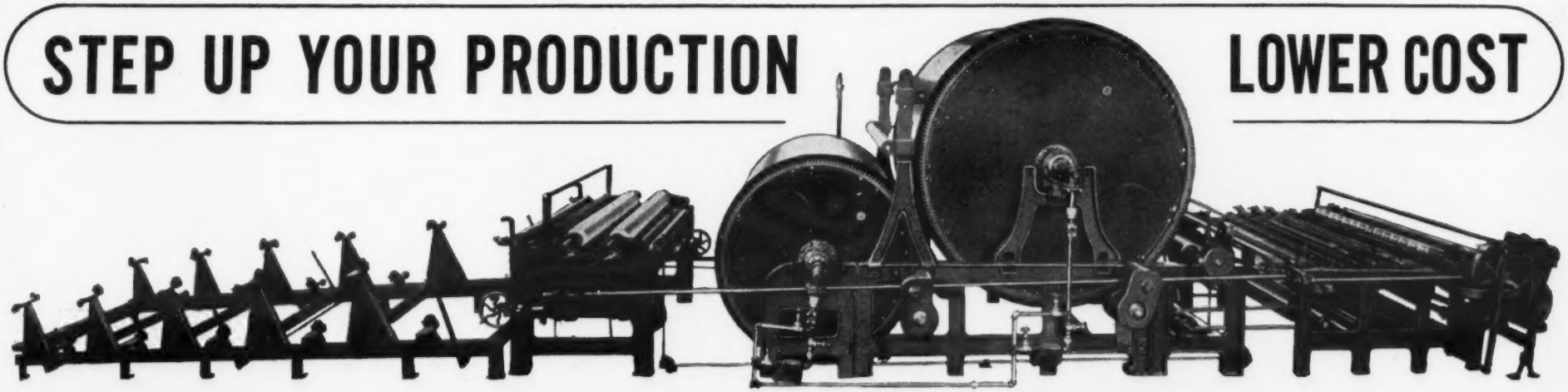
*A registered trade name of the International Nickel Company, Inc.

POWELL VALVES

STEP UP YOUR PRODUCTION LOWER COST

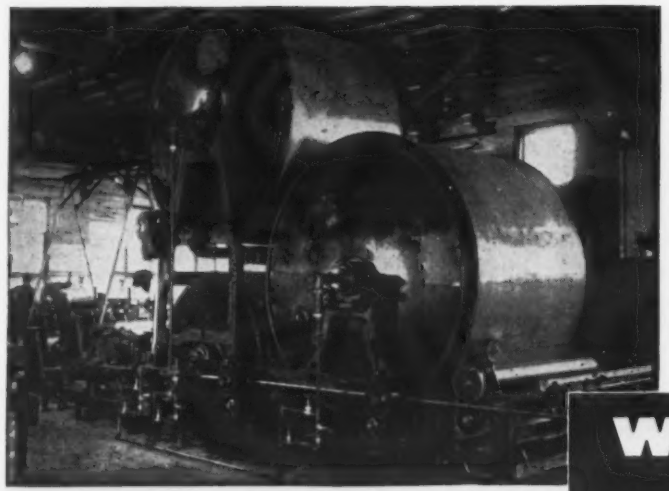


CREEL built with continuous steel side rails and heavy beam stands with adjustable ball-bearing beam journal supports . . . insures accurate constant alignment with cylinders.

HEAVY, RUGGED SIZE BOX with welded, stainless steel vat . . . extra deep bronze stuffing boxes . . . ball-bearing mounted size roll journals. Ball-bearing squeeze-roll lift eliminates strain . . . keeps rolls in perfect alignment with size rolls.

2 CYLINDER SLASHER equipped with heavy copper-covered 7′ and 5′ insulated cylinders, with bucket or syphon drains. All cylinder journals in heavy-duty, anti-friction bearings . . . positive drive (optional). Hood work . . . galvanized steel, copper or stainless steel . . . heavy-duty blower with individual motor drive.

HEAD END BALL BEARING EQUIPPED . . . including delivery and nip rolls . . . friction mounted in ball-bearing pillow blocks. Shafts of cone pulley drive mounted in anti-friction bearings.



3 CYLINDER SLASHER furnished with 5′ and 7′ cylinder and an extra 5′ or 7′ cylinder.

INSTALL A NEW IMPROVED SLASHER

From creel to head end, this Slasher includes the latest, mill-tested improvements that mean better sizing, increased production and lower operating costs.

Improved creel and size box, greater drying capacity, tension controls, positive and variable drives, anti-friction bearings, and other outstanding features assure fast, constant output of correctly sized yarn, free of excessive stretch.

The entire machine is designed and constructed for effortless, uninterrupted operation at maximum speed. Available in the following variable-speed drives:

Standard cone drive
Reeves motorized or with separate motor
Link-Belt P. I. V. motorized or with separate motor
Variable DC motors with AC generator set
DC Multi-Motor Drive generator set

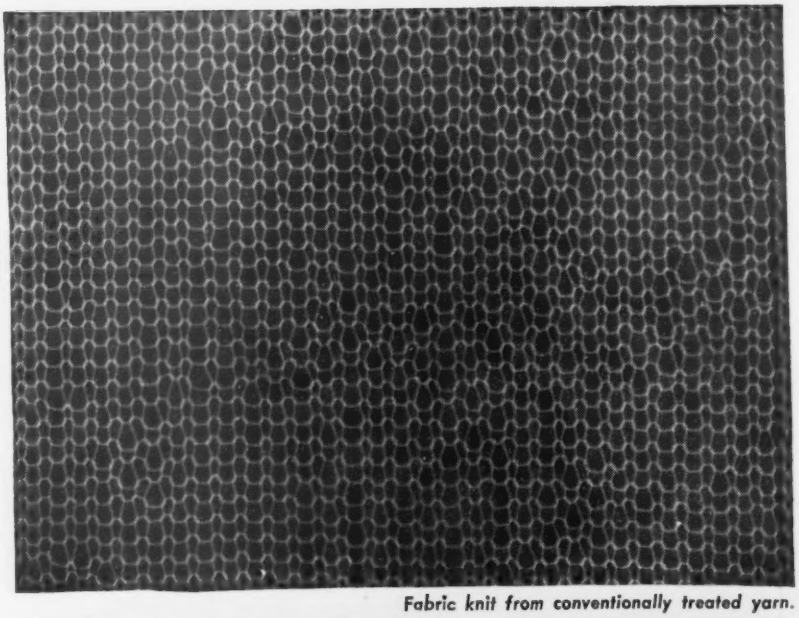
Let us show you how our Slashing Machinery and methods can, in addition to increasing your Slasher room production, improve your Weave Room efficiency.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

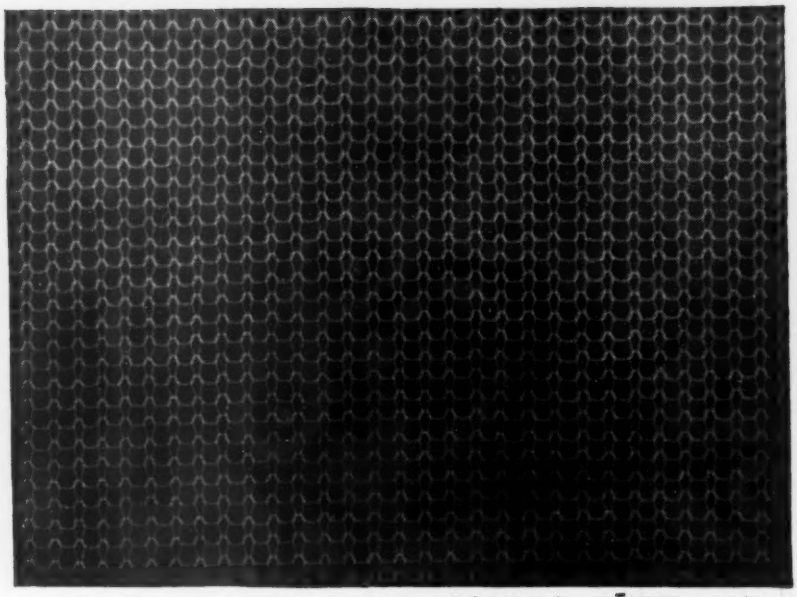
WEST POINT, GEORGIA

Is your stitch like this



Fabric knit from conventionally treated yarn.

or like this



Fabric knit from KŌNRITE *treated yarn.*

For the treatment of yarns for truly fine hosiery, Nopco presents KŌNRITE, a new and unique nylon coning oil. In Coning, Knitting, Seaming, KŌNRITE offers you:

OUTSTANDING RESULTS...

- ... ***in Coning*** — produces cones of proper density, practically eliminating overlaps, crossovers and underwinds
- ... increases cone production
- ... ***in Knitting*** — minimizes stripping of size — reduces pressoffs
- ... gives clear perfect stitch formation
- ... ***in Seaming*** — reduces roll ... its strong defense against curling is a major factor in greatly increased hosiery production

OUTSTANDING ADVANTAGES...

- ... Controlled viscosity, assuring even distribution of oil on yarn
- ... New stitches firmly cemented through rapid drying action
- ... Prevention of softening in lagged yarn and fabric

For full information on KŌNRITE, *please write today.*

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MODEL UKSAG PACKAGE DYEING MACHINES—closed pressure extractors—Open Stand Pressure Dryers.

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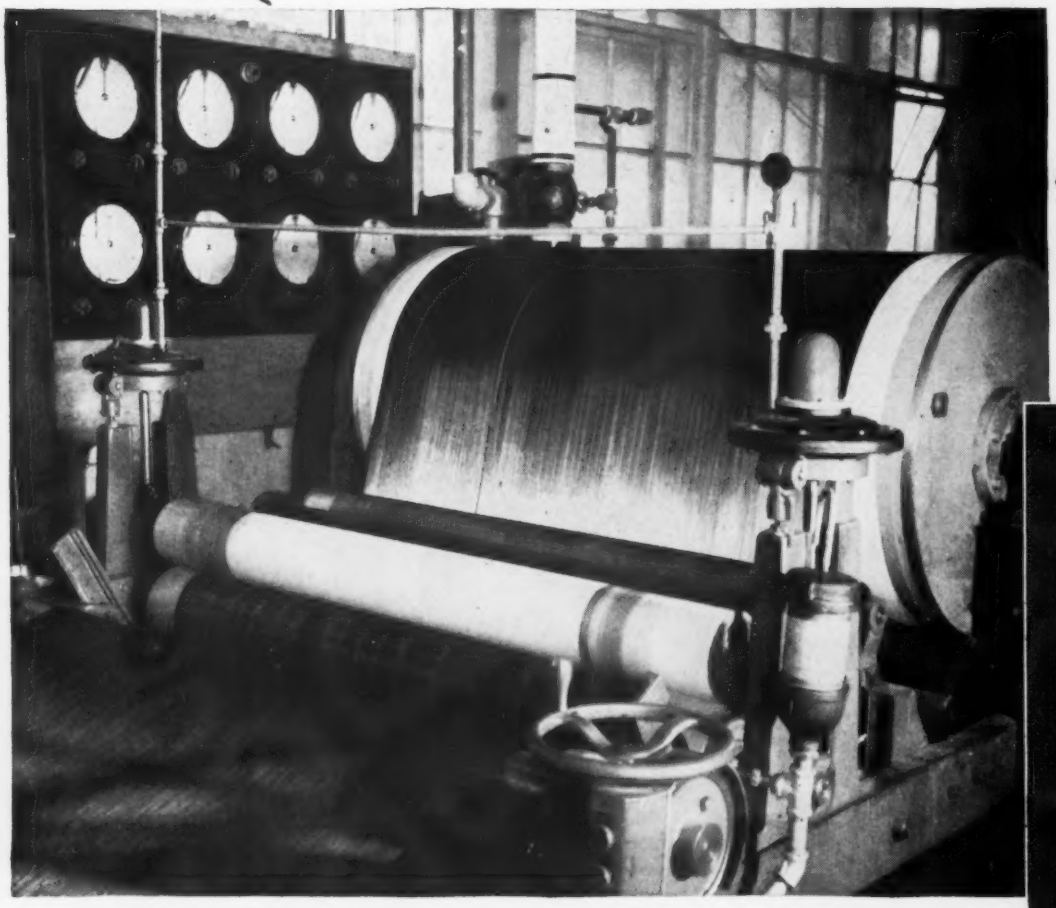
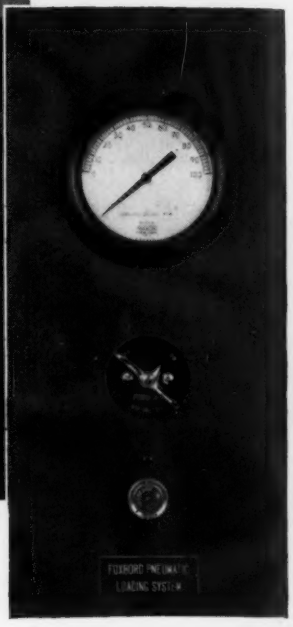
"UP" SLASHER EFFICIENCY

with the *RIGHT* pressure, where it does most good



Typical installation of Foxboro Pneumatic Loading (Stabilflo Air Motor assembly in foreground; instrument panel in inset below). In background: Foxboro Temperature Control Panel for this Johnson Machine Works slasher.



FOXBORO Pneumatic Loading for Quetsch Rolls

● Here is a simple, sure way to improve the efficiency of slasher quetsch rolls. It is an exclusive Foxboro development that provides calibrated, "cushioned" roll pressure. With this Pneumatic Loading system you can adjust the slasher quetsch roll pressure accurately by a simple twist of a knob. The established load is then maintained, from end to end: not by some unyielding mechanical device, but by a responsive, self-adjusting cushion of air.

An outstanding feature of this system is that roll pressure can be changed instantly and accurately.

Foxboro Pneumatic Loading for slashers represents the highest standards of instrument engineering. It is economical to operate, using only a 30 lb. air supply. Positively no air leakage. The instruments are built for long service under industrial conditions. The system is available for either 2 or 3 roll squeezing.

Include Foxboro Pneumatic Loading in your program to improve slasher efficiency. Get complete details in Bulletin B-306. **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass., U.S.A.** Branches in principal cities.

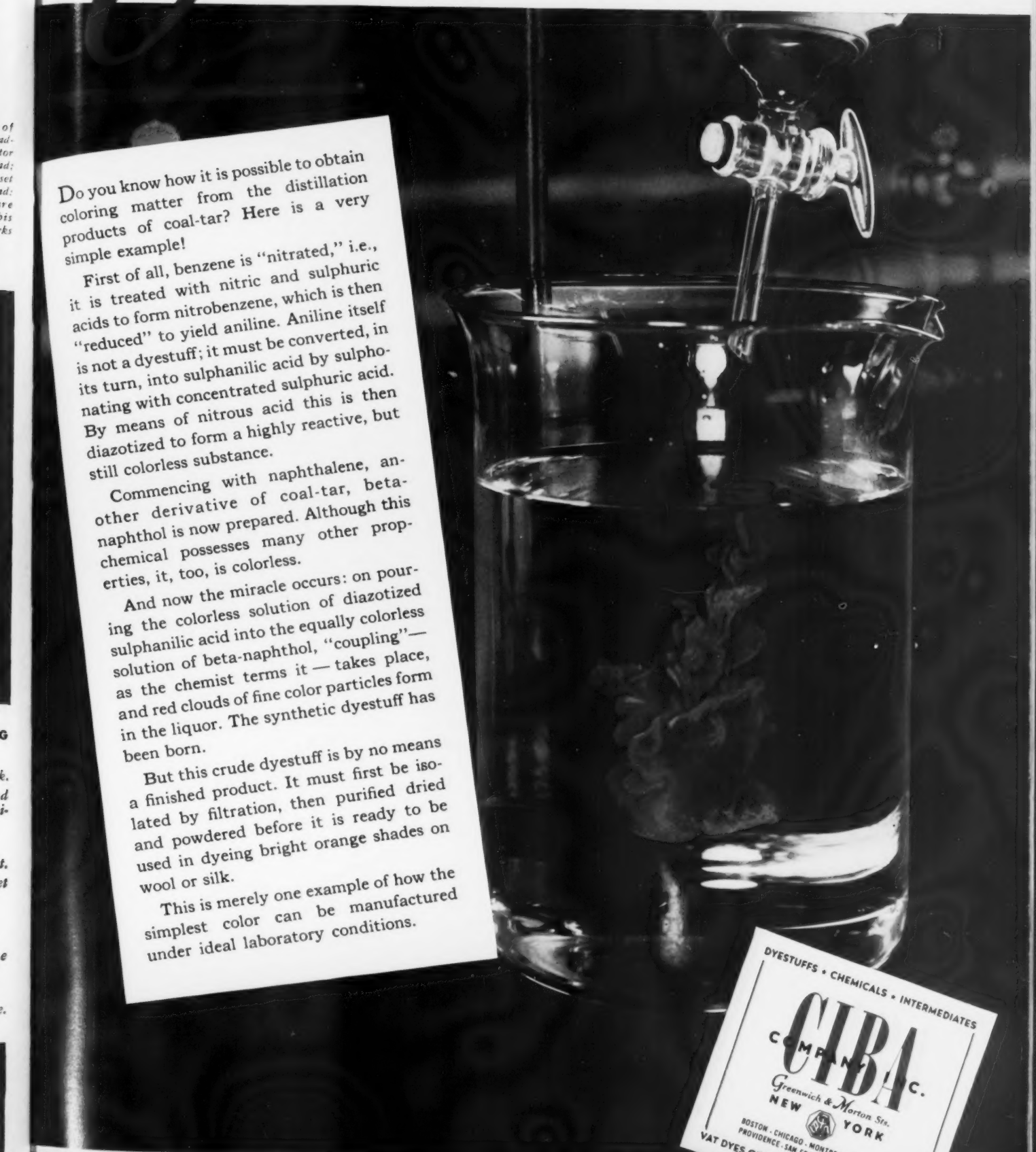
ADVANTAGES OF PNEUMATIC LOADING

1. *Increased Production.*
2. *Closer Uniformity of Finished Work.*
3. *Variations in material thickness and out-of-roundness of rolls automatically compensated.*
4. *Long Distance Control.*
5. *Easy, Quick, and Precise Adjustment.*
6. *No Bouncing of Rolls — No Wet Streaks.*
7. *Flip of Lever Lifts Roll Instantly.*
8. *Adjustments While Running.*
9. *Dead Weight of Roll can be Decreased.*
10. *Roll-Covering Life is Prolonged.*
11. *Easy Installation, Easy Maintenance.*

PNEUMATIC LOADING BY FOXBORO

REG. U. S. PAT. OFF.

Ciba DYESTUFF GLIMPSES



Do you know how it is possible to obtain coloring matter from the distillation products of coal-tar? Here is a very simple example!

First of all, benzene is "nitrated," i.e., it is treated with nitric and sulphuric acids to form nitrobenzene, which is then "reduced" to yield aniline. Aniline itself is not a dyestuff; it must be converted, in its turn, into sulphanilic acid by sulphonating with concentrated sulphuric acid. By means of nitrous acid this is then diazotized to form a highly reactive, but still colorless substance.

Commencing with naphthalene, another derivative of coal-tar, beta-naphthol is now prepared. Although this chemical possesses many other properties, it, too, is colorless.

And now the miracle occurs: on pouring the colorless solution of diazotized sulphanilic acid into the equally colorless solution of beta-naphthol, "coupling"— as the chemist terms it — takes place, and red clouds of fine color particles form in the liquor. The synthetic dyestuff has been born.

But this crude dyestuff is by no means a finished product. It must first be isolated by filtration, then purified dried and powdered before it is ready to be used in dyeing bright orange shades on wool or silk.

This is merely one example of how the simplest color can be manufactured under ideal laboratory conditions.

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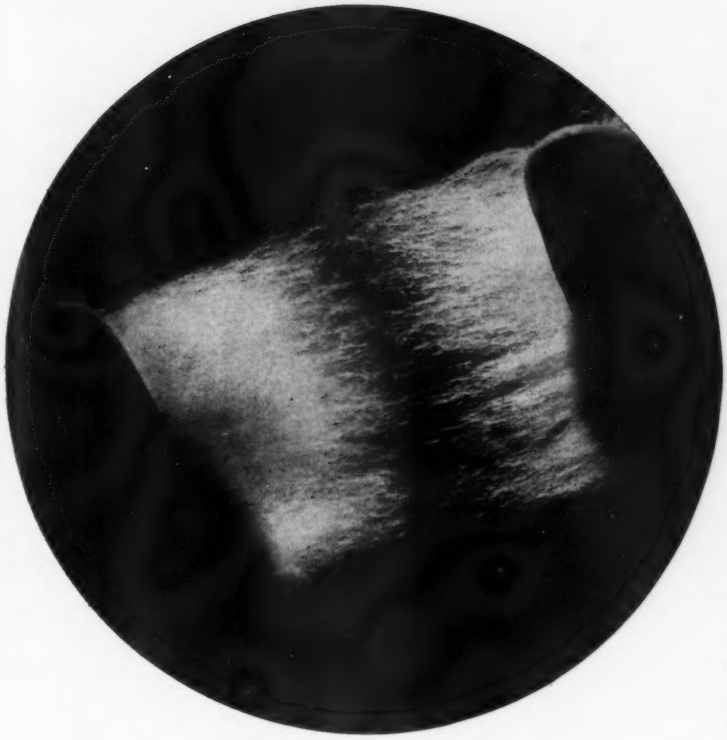

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improves results all down the line

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draping qualities

wrinkle resistance

stability

ironed-in crease retention

soil and stain resistance

mildew resistance

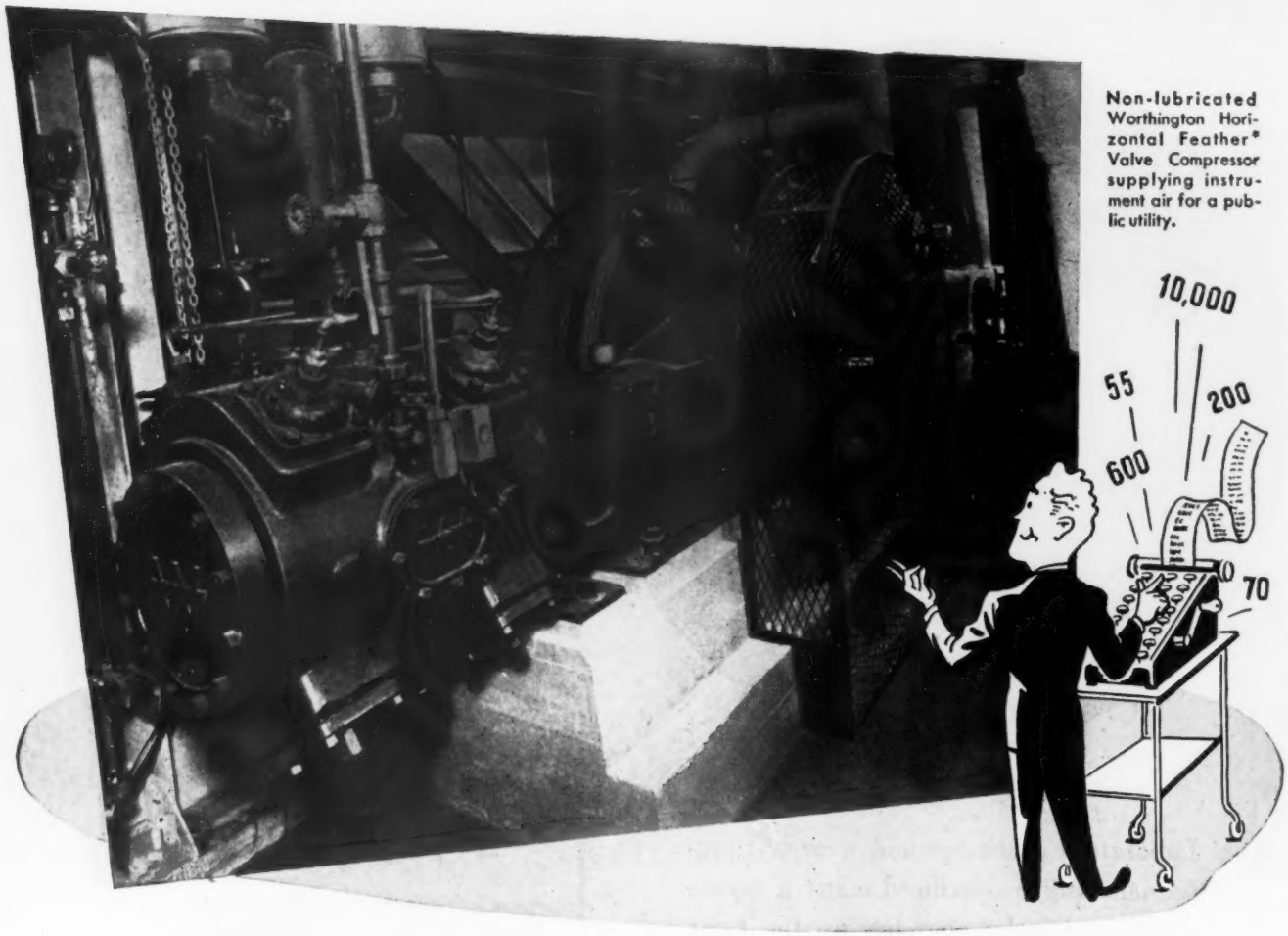
Laboratory check-ups and wear-test performance have convinced many a manufacturer, that by stepping up the TECA content, he increases those qualities in a fabric which sell it once—sell it again.

TECA, Eastman *crimped* acetate staple mixes well with other fibers—performs smoothly on any spinning system. It suggests unlimited possibilities—for men's and women's wear fabrics.

For further information about TECA, consult A. M. Tenney Associates, Inc., 10 East 40th St., New York, sales representatives for TENNESSEE EASTMAN CORPORATION (Subsidiary of Eastman Kodak Company), KINGSPORT, TENNESSEE.

EASTMAN

crimped acetate rayon



Non-lubricated Worthington Horizontal Feather* Valve Compressor supplying instrument air for a public utility.

Piston Displacement

UP TO 1,044,367,200 C. F. Y.

(1,047,228,480 Cu. Ft. Each Leap Year)

Maybe it's a bit on the optimistic side to claim that a Worthington Single Horizontal Compressor, Type HB, will keep going 24 hours a day, 365 days a year. But, the more you look into this line of 29 rugged machines (ranging in size from 5" x 5" to 26" x 13"), the more clearly you'll see that everything about them adds up to continuous, heavy-duty operation . . . year after year.

WRITE FOR BULLETIN L-640-B1A

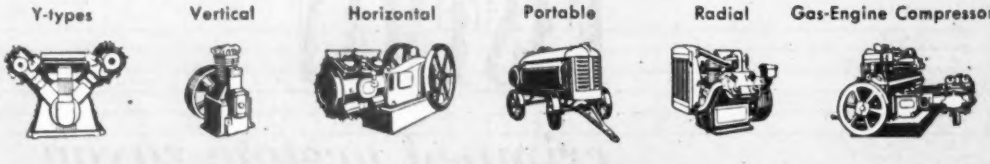
If getting low-cost air is your responsibility, you'll want to look into the 24 pages of this bulletin. Write for it today and learn why — in compressors, as in so much other equipment — *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Compressor Division, Buffalo, New York.*

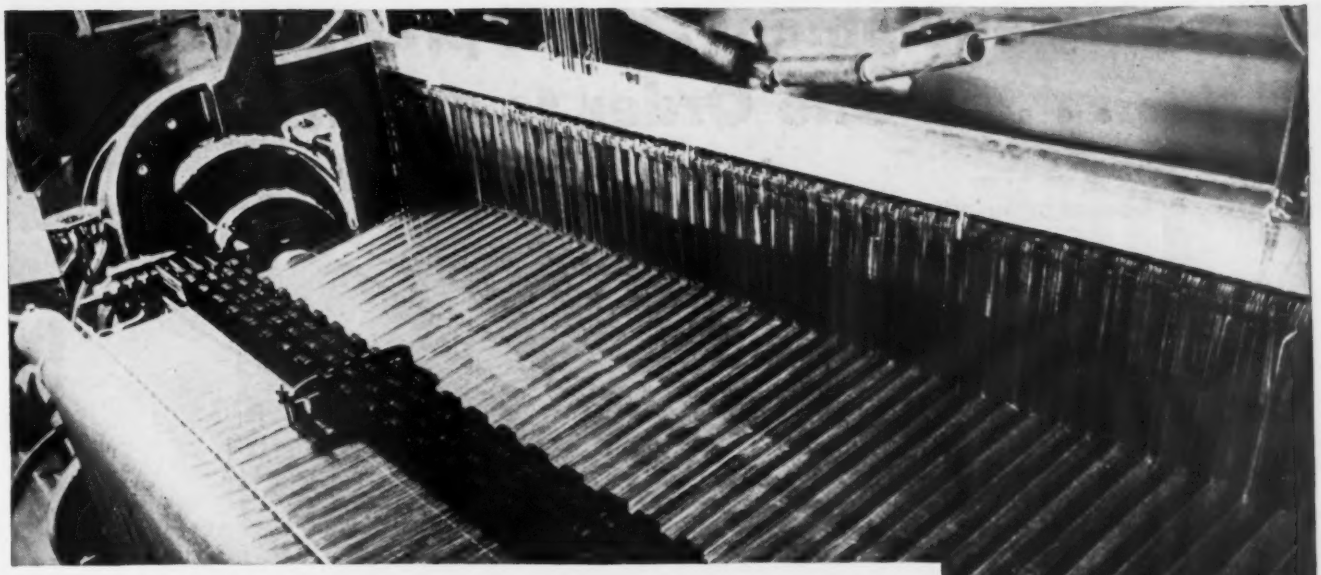
*Reg. U.S. Pat. Off.

WORTHINGTON

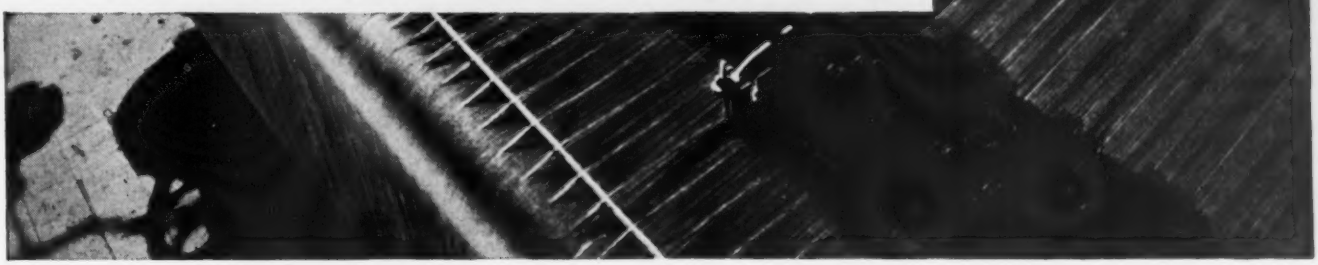
K7.4

NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON





It's gentle to delicate textiles



• There are two important points about ARMCO Stainless Steel equipment that will appeal to your sense of economy and efficiency. Its smooth, clean surface practically eliminates staining and snagging. Stainless is gentle to the most delicate yarns.

• Bright, rustless ARMCO Stainless Steel is the ideal metal for heddles, drop wires and other loom parts that come in contact with yarns and fabrics. Because it needs no rust preventive and has less attraction for gums and sizes, it gathers less dust and dirt.

• ARMCO Stainless resists the corrosive effects of high humidity in weave rooms. It is easy and inexpensive to clean. A simple wash leaves its hard surface gleaming. This saves time and money.

• There is a correct grade of ARMCO Stainless sheets, strip, bars and wire for practically every application in your mill. For full information write your equipment fabricator, or get in touch with The American Rolling Mill Company, 11171 Curtis Street, Middletown, Ohio. Export: The Armco International Corporation.

TURN IN YOUR SCRAP—PROTECT YOUR STEEL SOURCE

• Unless steel mills get more scrap at once, everybody must wait longer for steel. You can help. Check your unusable tools, machines and obsolete equipment. Collect all the iron and steel scrap you can find and speed it through regular channels to the mills. The need has never been more critical—not even in wartime.

STAINLESS ARMCO STEEL

THE AMERICAN ROLLING MILL CO.

• SPECIAL-PURPOSE SHEET STEELS

• STAINLESS STEEL SHEETS, STRIP, BARS AND WIRE

The American Rolling Mill Company
11171 Curtis Street, Middletown, Ohio

Please send information about the special stainless bar and wire stock you produce for the textile industry.

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OUTSTANDING QUALITY in every item—assuring uniform dependability and durability in every part of piping systems.

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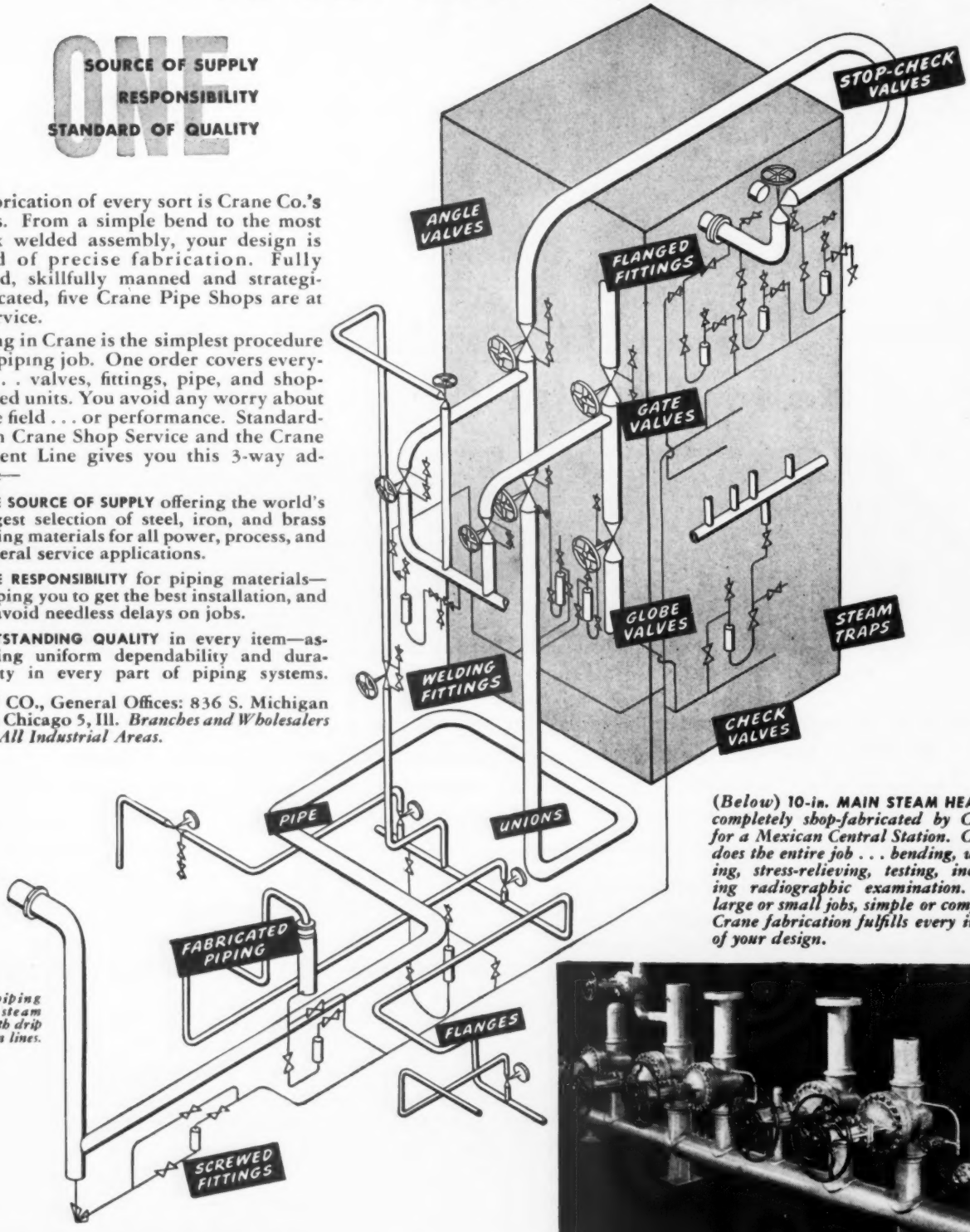
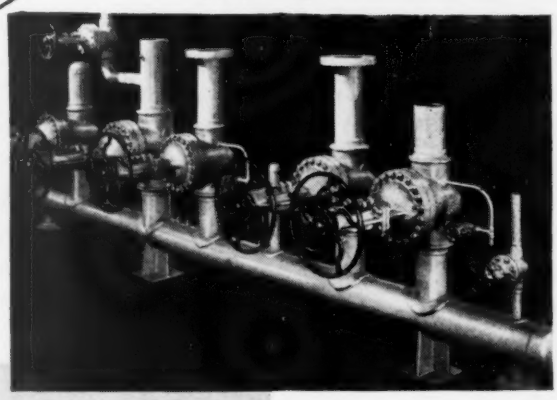


Boiler piping showing steam mains with drip and drain lines.

(*Below*) **10-in. MAIN STEAM HEADER** *completely shop-fabricated by Crane for a Mexican Central Station. Crane does the entire job . . . bending, welding, stress-relieving, testing, including radiographic examination. On large or small jobs, simple or complex, Crane fabrication fulfills every intent of your design.*



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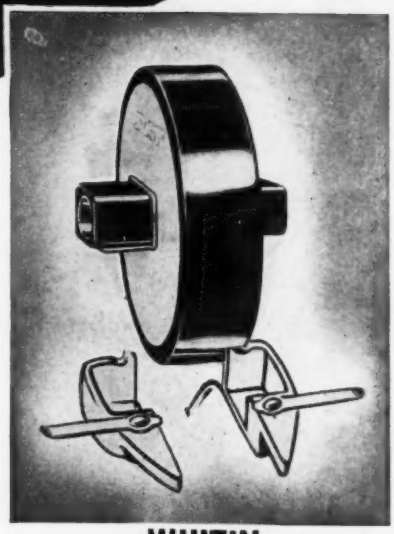
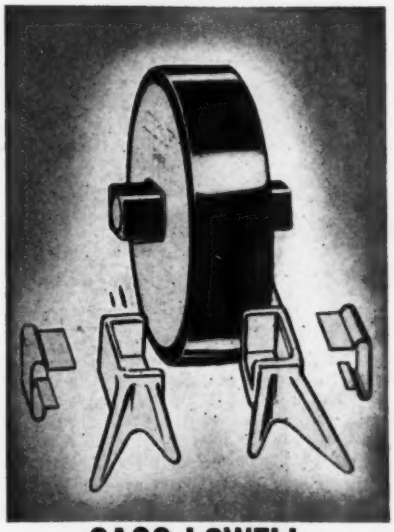


WHITIN



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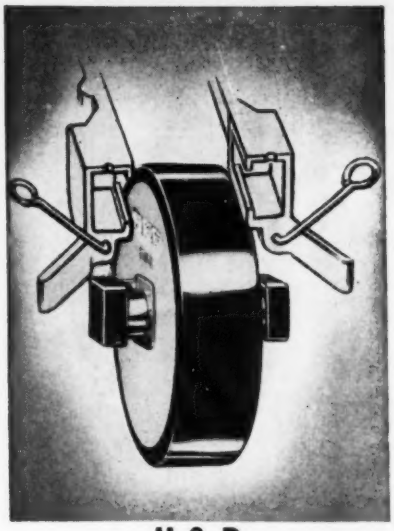

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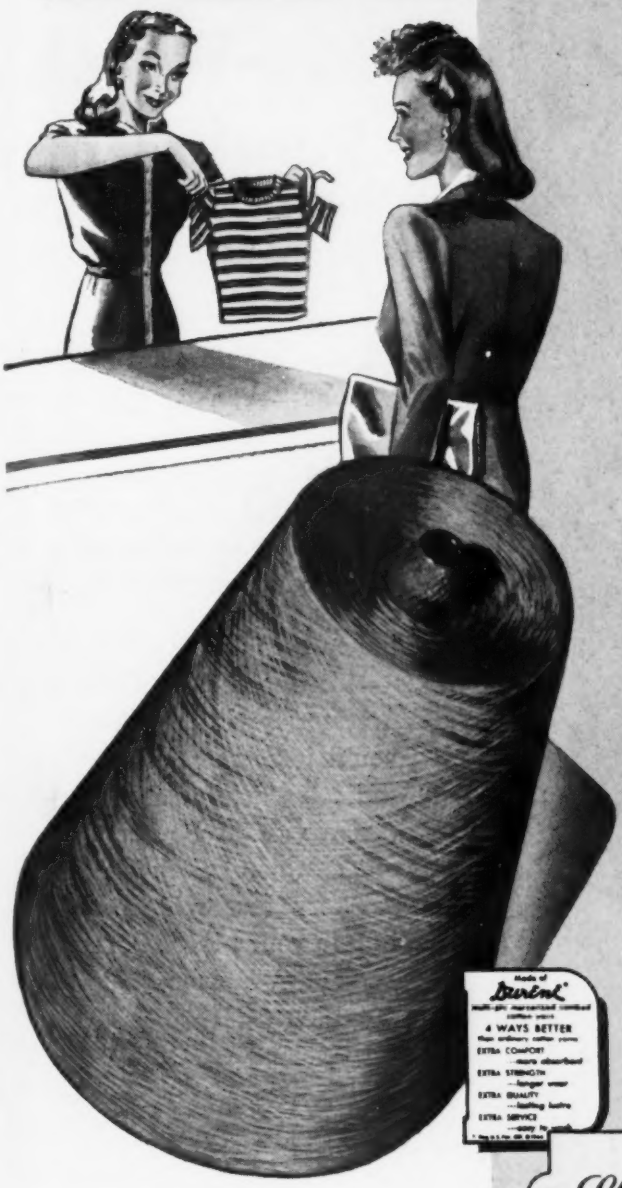
THE *only* BALL BEARING TENSION PULLEY FOR EXISTING OLD-STYLE BRACKETS

STANDARD *Durene* gives you greater production of quality knitwear—with more comfort, beauty and wear



Your knitting machines will turn out more quality knit goods per hour when you run Standard Durene. This superior combed mercerized yarn is made so uniform, supple, smooth and elastic it purrs through your needles. It produces more lustrous, soft, smooth-textured fabrics . . . the kind that keeps your customers sold. You run no quality risk with Standard Durene. Its careful processing is all done in our own plant. Standard Durene is rigidly controlled by us from the purchase of selected quality raw cotton to the finished yarn package.

Standard Durene measures up not only to high Durene quality but to our own high standards evolved from our more than seventy years' experience and our constant research. Nationally known manufacturers always choose Standard Durene to safeguard their quality reputation . . . Keep your quality customers satisfied . . . specify Standard Durene.

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TOWMOTOR FORK LIFT TRUCKS *and* TRACTORS

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RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

"But we were saving that money for our new baby."

John was having a bad time of it.

He was trying to explain things to the "little woman."

He simply had to have that new car. It was a necessity. He needed it to get to and from his job.

After all, he hadn't actually spent the money. It was really a matter of investment . . .

And so he went—on and on.

But the "little woman" just kept dabbing her eyes and blowing her nose and saying, "But we were saving that money for our new baby."

And she was right—

And John knew she was right.

•

A Manufacturer becomes a little casual in handling his Reserve for Depreciation. Instead of keeping that Cash Money in negotiable securities where it belongs, he lends it to the business for working Capital . . .

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It's frozen!

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An advertisement on "Good Housekeeping in Business," published by the makers of Reading Full-Fashioned Knitting Machines.

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Target for Flattery . . . Swift as an arrow in flight, sheer full-fashioned stockings go straight to a woman's heart. Flawless fabrics score a bulls-eye for the manufacturer, too. The high quality you desire is assured when you use TMW "Fixture Drawn"* Needles . . . fine needles made by a special TMW patented process which holds the needles straight and true. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

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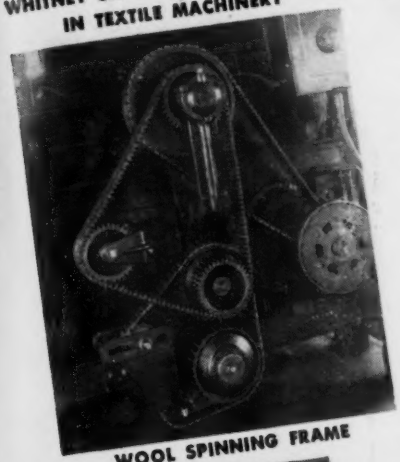
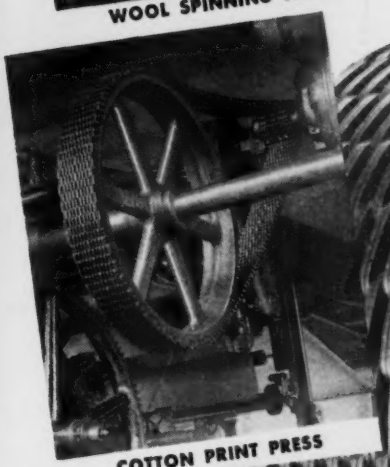
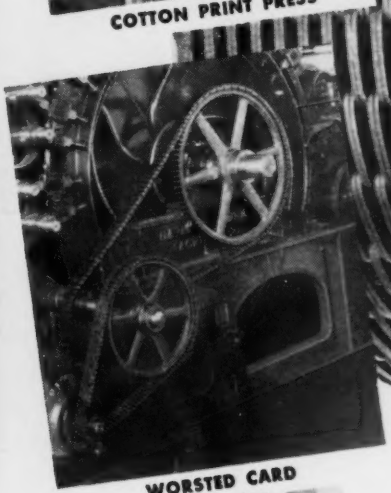


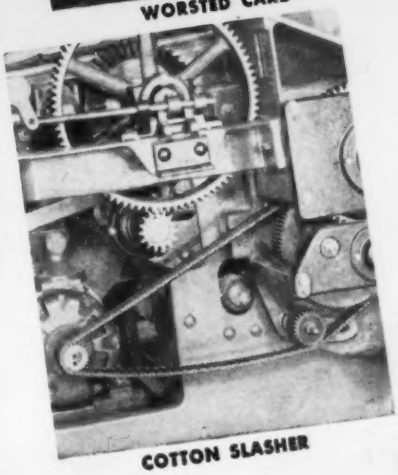
WOOL SPINNING FRAME



COTTON PRINT PRESS



WORSTED CARD



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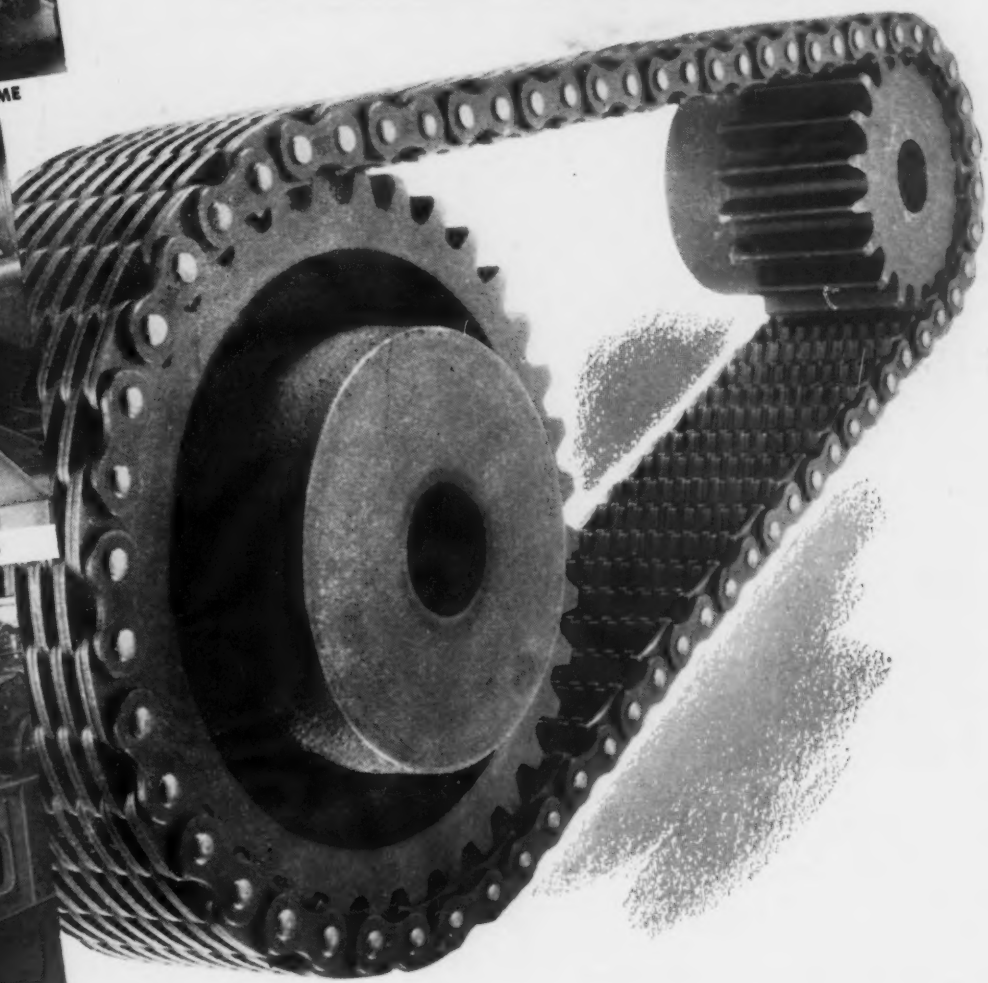

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Teamed up with these efficient chains are accurately made Whitney Cut Tooth Sprockets . . . correctly designed to insure smooth, quiet performance and maximum operating efficiency.

Add these operating advantages to the Whitney *flexibility* in meeting drive design problems and you'll readily see why Whitney Silent Chain Drives are used as original equipment by most textile machinery manufacturers. It pays to *standardize* on Whitney. Write for information.

The Whitney Chain & Manufacturing Co.

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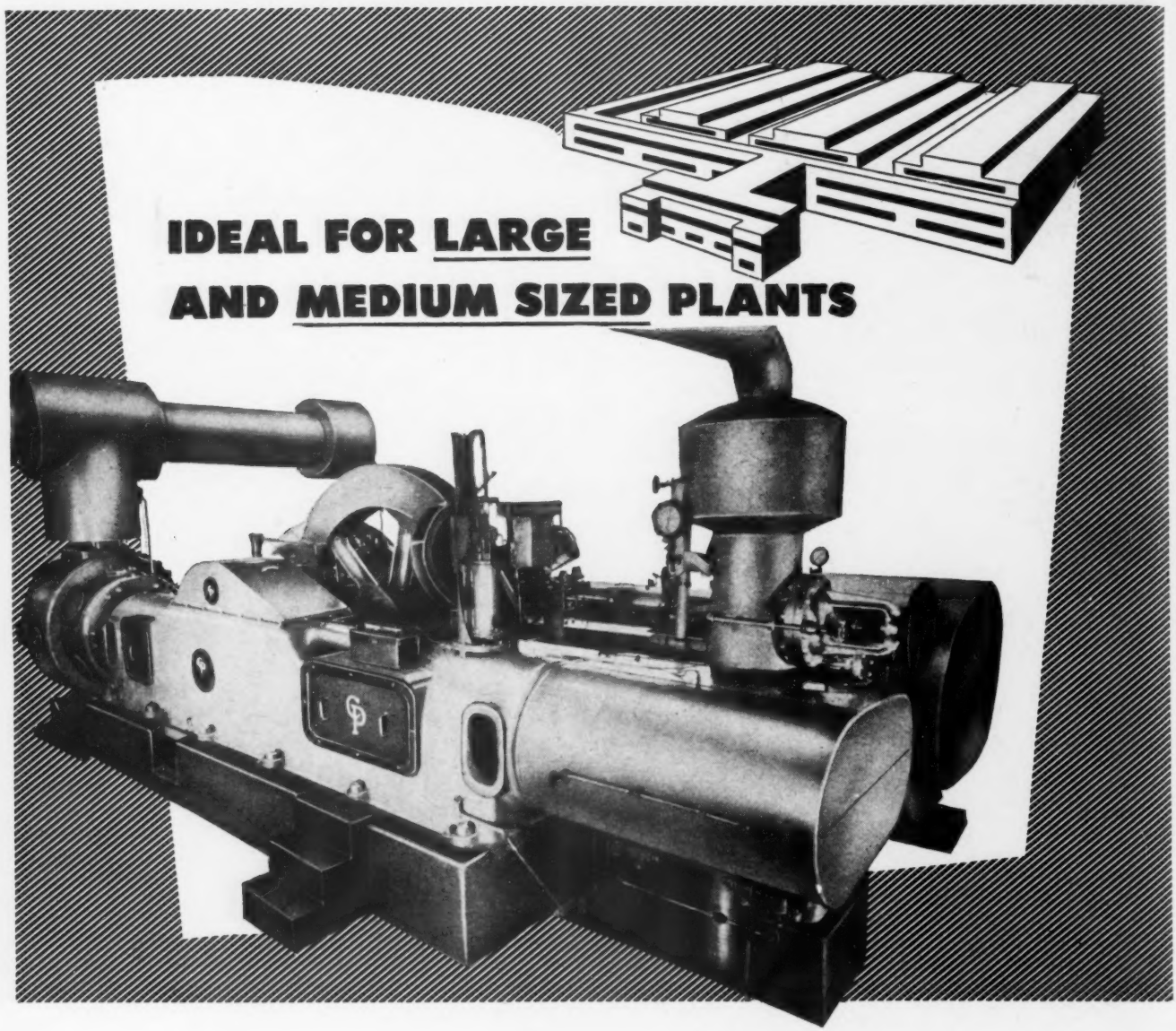

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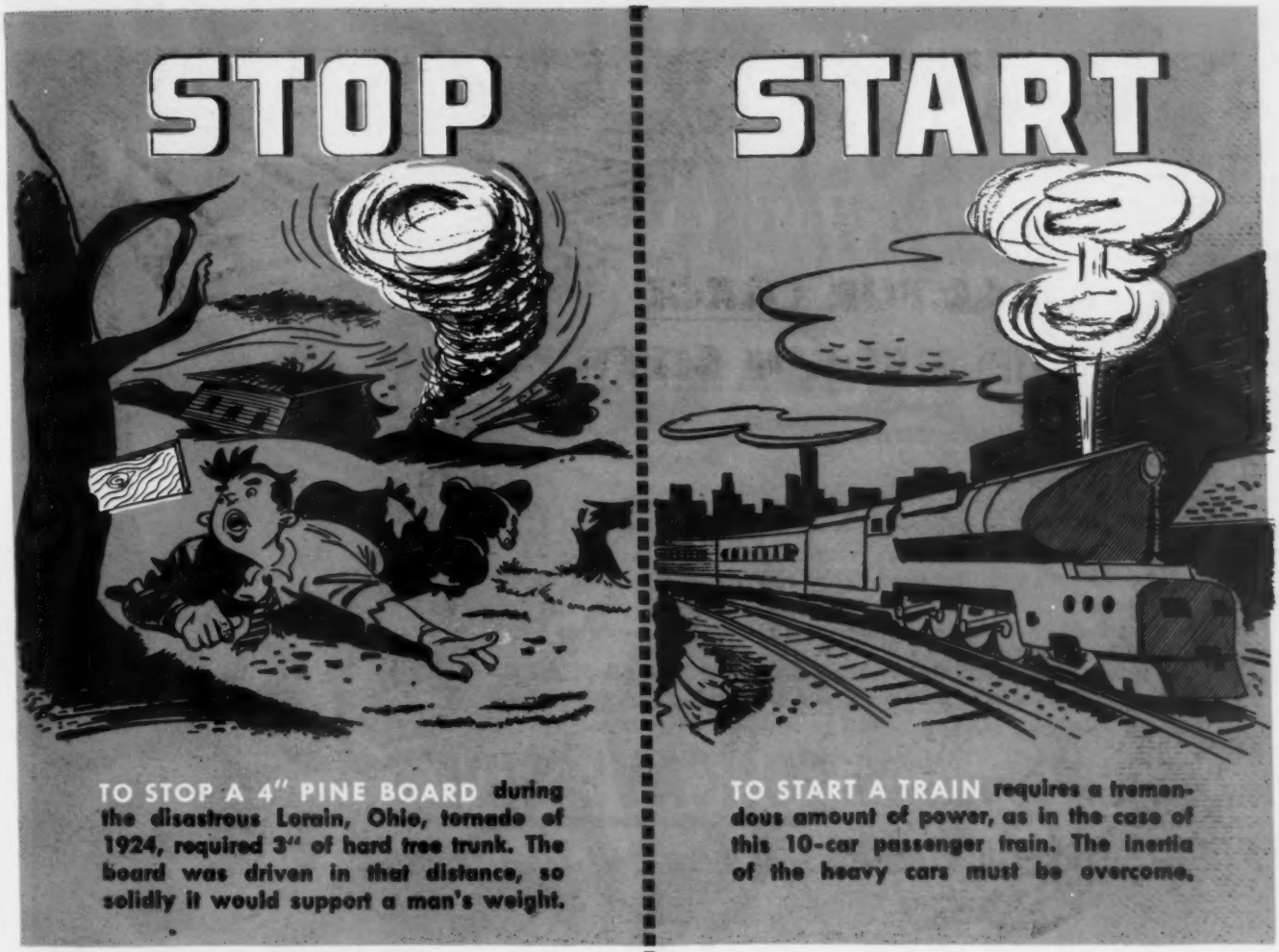
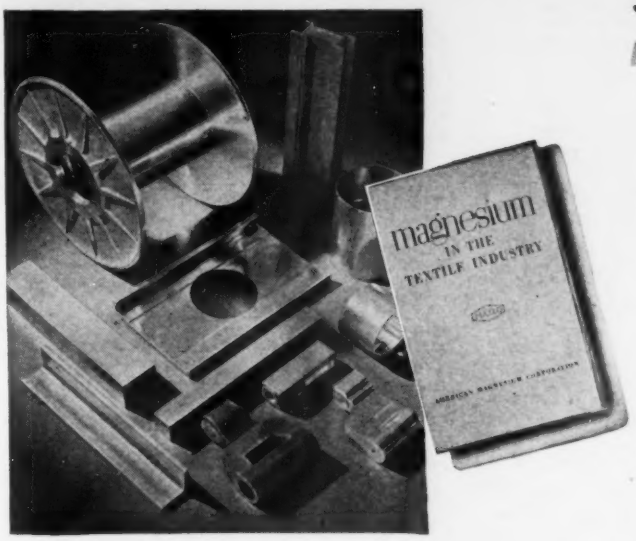


TO STOP A 4" PINE BOARD during the disastrous Lorain, Ohio, tornado of 1924, required 3" of hard tree trunk. The board was driven in that distance, so solidly it would support a man's weight.

TO START A TRAIN requires a tremendous amount of power, as in the case of this 10-car passenger train. The inertia of the heavy cars must be overcome.



MORAL: *It takes a lot of power to stop something that's moving fast, or start something that's stopped. In equipment as full of stops and starts as the high-speed, reciprocating parts of textile machinery, you can save a lot of power if those parts are American Magnesium.* It's 35% lighter than aluminum, 75% lighter than steel, corrosion resisting, nonwarping. See that your machinery builder uses it wherever possible, to save power and reduce vibration for you. ALUMINUM COMPANY OF AMERICA, sales agent for American Magnesium products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in principal cities.

TEXTILE BUILDERS. Write for your copy of "Magnesium in the Textile Industry". Contains full information on textile applications, advantages, and semifabricated forms.

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The *SIDE* of a V-BELT

is the *ONLY* Part that *Even Touches* the Pulley

Naturally, it *GETS* the *WEAR!*

Diagram of V-Belt in Sheave Groove

The moment you look at a V-belt in its sheave, you see that the *sides* are the only part that ever *touch* the pulley. The *sides* do all the *gripping*—they get *all the wear* against the sheave groove wall. The sides *pick up* the load. They transmit that load to the belt as a whole. And then, once more, the sides—and the sides alone—take hold of the driven pulley and deliver the power to it.

No wonder you have always noticed that the sidewall of the *ordinary* V-Belt is the part that *wears out first.*

Now See How the *Patented* CONCAVE SIDE

*REDUCES Sidewall Wear— *Lengthens Belt Life!*

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt. The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the *middle* of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

*More Important NOW That Gates SUPER V-Belts are Available

Now that Gates *SPECIALIZED* Research has resulted in Super V-Belts capable of carrying much heavier loads—up to 40% *higher horse-power ratings* in some cases—the sidewall of the belt is called upon to do even *more work* in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important NOW than ever before!

THE GATES RUBBER COMPANY
DENVER, U. S. A.
"World's Largest Maker of V-Belts"

The CONCAVE SIDE is a GATES PATENT

Straight Sided V-Belt — Fig. 1

How Straight Sided V-Belt Bulges When Bending Around Its Pulley — Fig. 1-A

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall — Fig. 2

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley. — Fig. 2-A

No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt.

477

GATES VULCO ROPE DRIVES
Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

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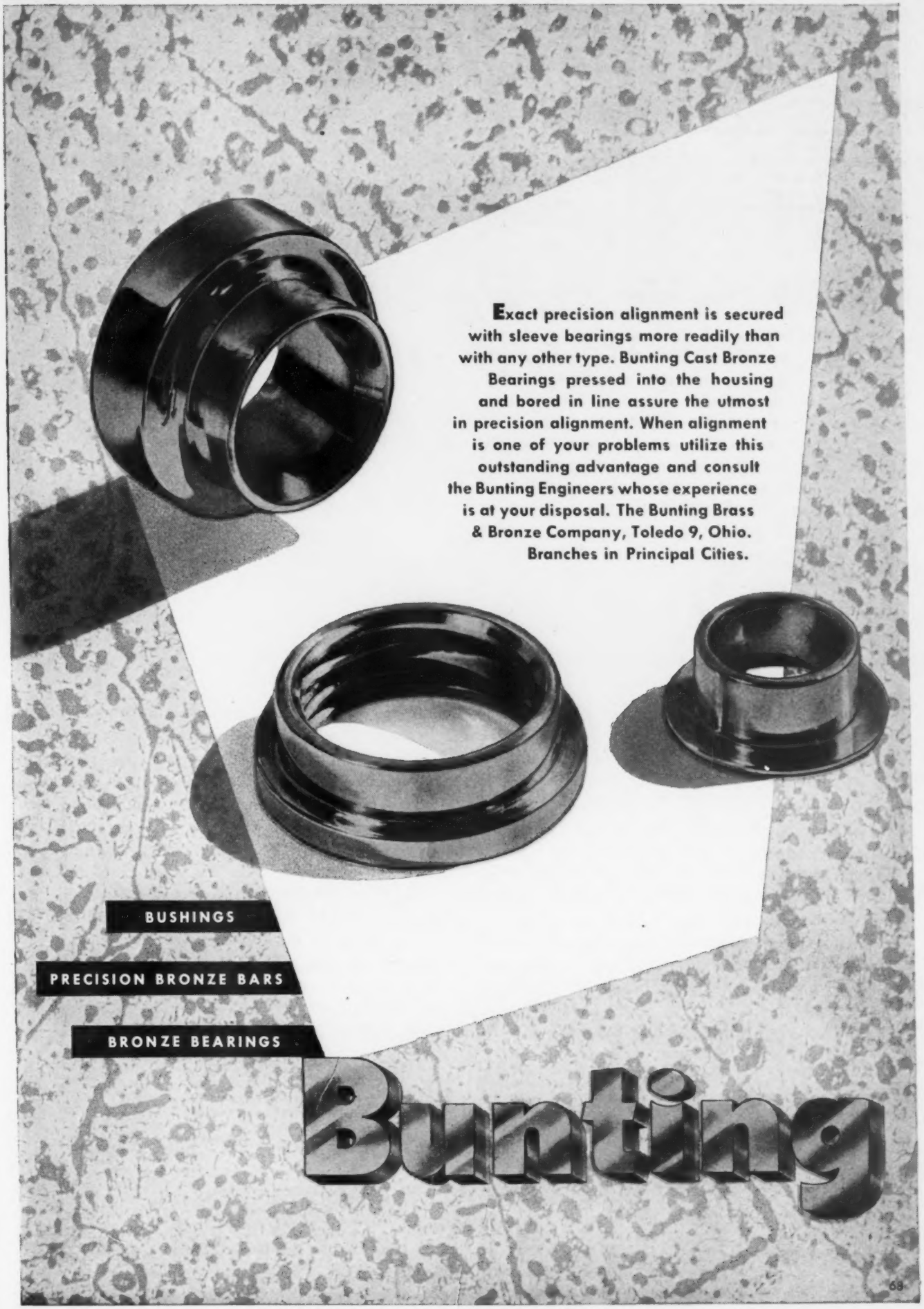
THE MARK OF SPECIALIZED RESEARCH


Exact precision alignment is secured with sleeve bearings more readily than with any other type. Bunting Cast Bronze Bearings pressed into the housing and bored in line assure the utmost in precision alignment. When alignment is one of your problems utilize this outstanding advantage and consult the Bunting Engineers whose experience is at your disposal. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Branches in Principal Cities.
BUSHINGS
PRECISION BRONZE BARS
BRONZE BEARINGS
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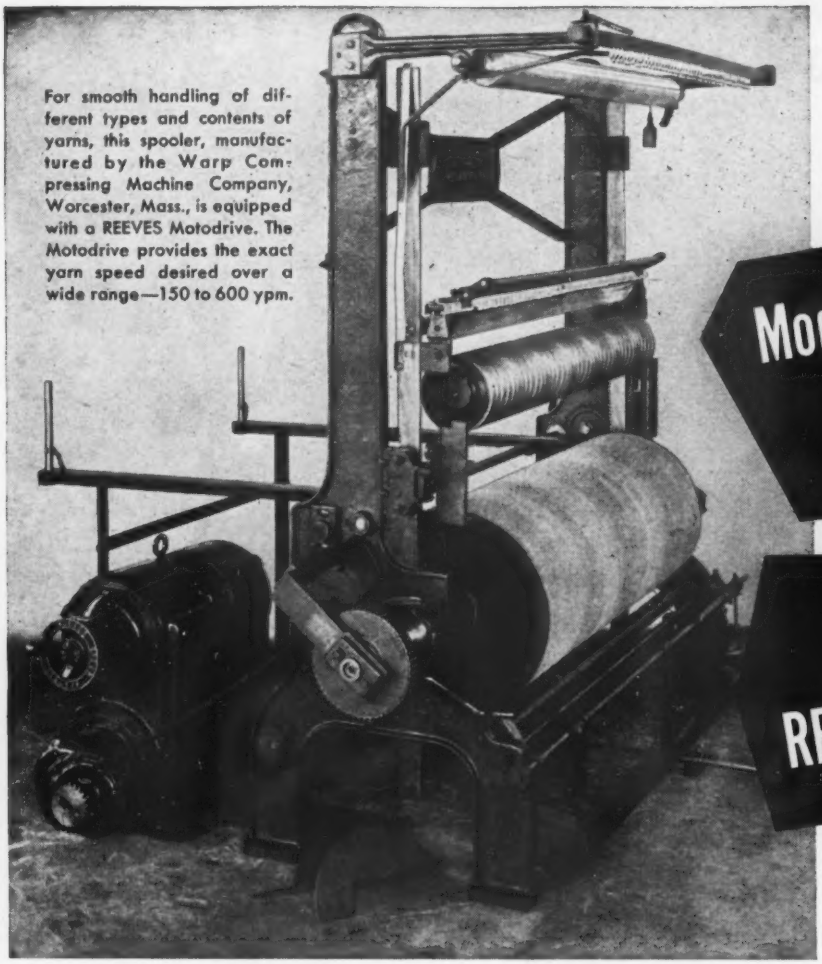


For smooth handling of different types and contents of yarns, this spooler, manufactured by the Warp Compressing Machine Company, Worcester, Mass., is equipped with a REEVES Motodrive. The Motodrive provides the exact yarn speed desired over a wide range—150 to 600 ypm.

Modern Mill Machinery and Methods

Call for REEVES Speed Control

To compensate for changes in temperature, humidity, types of yarn, operator's skill and the many other variables encountered in textile processing, mill operators in increasing numbers are turning to REEVES Speed Control.

For, on every job—under every changing condition—REEVES Variable Speed Drives are the one *sure* way of obtaining the accurate, infinite speed adjustability needed to utilize the full capacity of modern methods and machines. In thousands of textile installations—on beamers, warpers, slashers, dry cans, mangles, dryers, nappers, range finders and many other machines—REEVES Speed Control has proved the answer to increased production of uniformly high quality . . . *at greatly reduced manufacturing cost.*

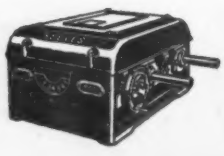
The REEVES line is built around three basic units—all simply designed and ruggedly built . . . offering the widest range of designs, sizes and speed ratios . . . with manual, electric remote or automatic control. A REEVES engineer with a broad experience in textile mill operations will be glad to assist you in selecting the REEVES equipment best suited to your particular needs. Ask him to call soon. Meanwhile, write for Booklet W-455 which describes the complete REEVES line.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

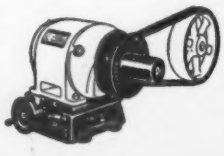
Recognized Leader in the Specialized Field of Speed Control Engineering

THE THREE BASIC REEVES SPEED CONTROL UNITS

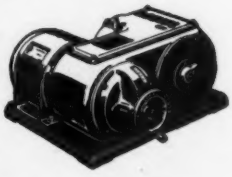
VARIABLE SPEED TRANSMISSION for providing infinite, accurate speed flexibility over a wide range—2:1 to 16:1. Sizes—fractional to 87 hp.



VARI-SPEED MOTOR PULLEY converts any standard constant speed motor to a variable speed drive within 4:1 ratio. Sizes to 15 hp.



MOTODRIVE combines motor, speed varying mechanism and reduction gears in single compact unit. Speed variations 2:1 to 6:1 inclusive. Sizes to 15 hp.



Accurate Variable

REEVES Speed Control

Gives the Right Speed for Every Job!

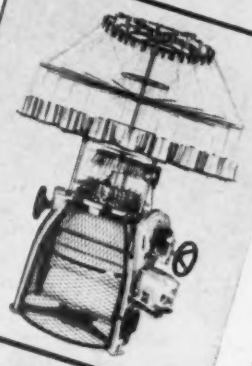
★ SUPREME ANSWERS YOUR CIRCULAR KNITTING NEEDS ★

MODEL MJ • Knits Jersey at 100 Yds. Per Hr.

With the Body Size Model MJ the planned body size of the garment comes right off the machine.

This high-production, multiple feed machine turns out a variety of jersey fabrics in either solid colors or a wide range of horizontal stripes. Knits cotton yarn from 8/1 to 36/1 or their equivalents in wool, rayon and silk. New, infallible Micromatic Stitch control assures precision stitch uniformity.

The Model MJ is available in all diameter sizes from 8" to 30", with corresponding maximum number of feeds.

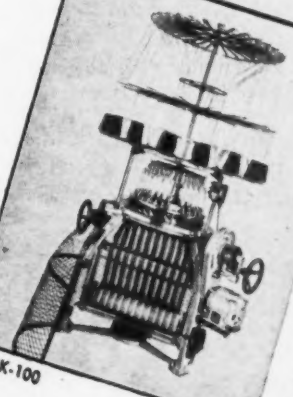


MODEL ML • Knits Pile, Loop and Plush Fabric at 35 Yds. Per Hr.

A multiple feed, loop pattern wheel machine with an unusual knitting elements system, the Supreme Model ML Pile Fabric Machine can produce a variety of cloths for novelties, bed jackets, lingerie, swim suits etc. The cloth can be brushed, napped or used "as is". The 20" diameter—24 feed size and 24" — 32 feed size are standard.

MODEL IC • Knits Fleece Coatings at 30 Yds. Per Hr.

The Supreme Model IC Coating Machine produces heavy and light-weight fleeces and other coating materials, for use in topcoats, overcoats, ski suits, blankets, etc. Ruggedly constructed to withstand continuous operation of heavy wool yarns. The 26" diameter — 36 feed size is capable of producing 54" to 56" finished fabric.



SK-100

MODEL ROF • Knits Oversize "Floatless" Patterns at 30 Yds. Per Hr.

This Supreme "Floatless" Pattern Wheel Machine is equipped with 3 Level Unitary Pattern Wheels to produce oversize pattern fields, *with no loose floats.* With the same set of needles and pattern wheels you can knit and welt, knit and tuck, welt and tuck on any or all feeds, *without resorting to hand selection or changing of cams.* This machine gives you wide pattern versatility; yet it is simple to operate and maintain.

All Supreme Machines feature modern, rugged construction • smooth acting revolving cylinder • adjustable sinker and carrier rings • counter-balanced take-up • steady cone plate bars • pigtail, double tie-ups of yarn cones • electric stopmotions • unit motor drive • positive multi-disc clutch roller-bearing cloth roll-up three automatic idling hand-wheels • warning and locating lamps and numerous safety devices.

Write for complete information on any or all of these machines.

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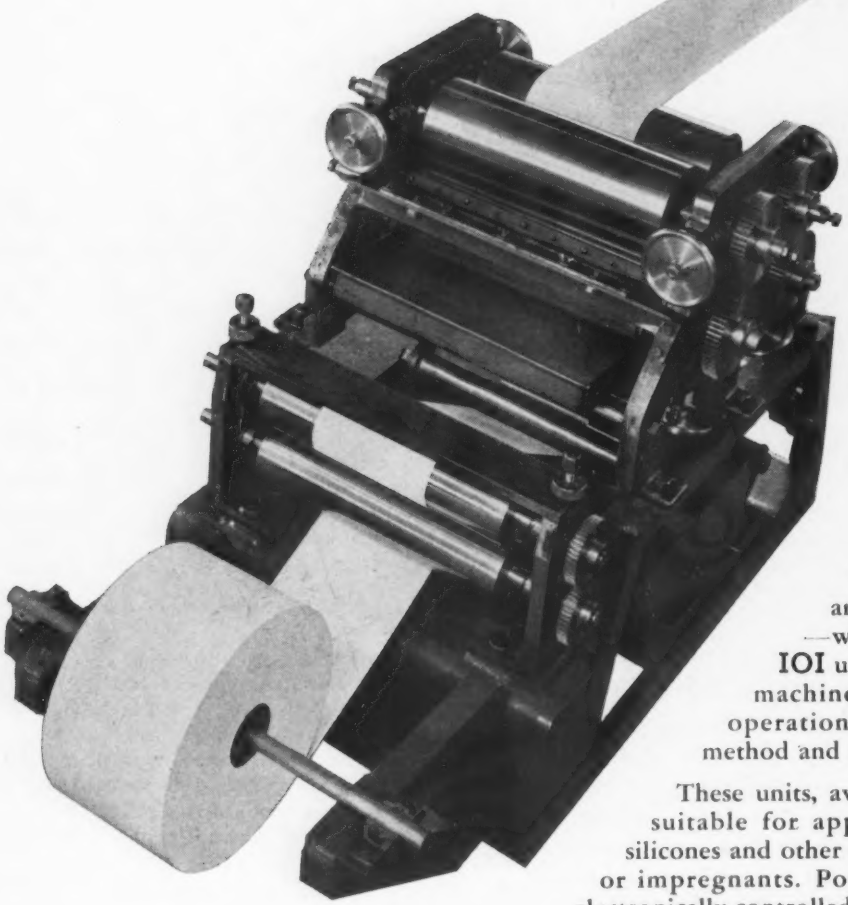

UNIVERSAL TYPE COATING MACHINE ...IOI ENGINEERED

• It augurs well for a fine finish on any web material—fabric, paper, or film —when it gets off to a flying start on an **IOI** universal type coating machine. This machine provides unusual flexibility of operation, easy interchangeability of coating method and accuracy of coating thickness.

These units, available for webs up to 60" wide, are suitable for application of hydrosols, organosols, silicones and other types of organic or inorganic coatings or impregnants. Powered by mechanical, hydraulic or electronically controlled drives, they can be synchronized with windup stands, drying oven conveyors, and tension or pull rolls as required in any particular coating system.

IOI coating machines are precision machines throughout, featuring precision-ground rolls, highly accurate bearing mountings, hollow rolls for heating or cooling, micrometer roll adjustments and micrometer doctor blade adjustments.

These machines, adaptable for roller coating, dip and flow coating, or scraper knife coating, are typical of **IOI** ingenuity in the engineered application of heat in continuous operations.

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TEXTILE WORLD
JULY, 1947 • VOL. 97, NO. 7

SPAIN Has One Really Modern Textile Mill

HIGHLIGHTS: *Cotton-goods production on Spain's 84,000 looms, one shift, just about satisfies domestic needs — One relatively new mill operates 400 looms on six types of fabrics — Woolen capacity slightly in excess of domestic consumption — Interest in American machinery.*

By CHARLES S. UNDERWOOD

SPAIN has approximately 2,250,000 spindles and 84,000 power looms in its cotton industry. It is necessary for yarn mills to operate about 1½ shifts per 48-hr. week to keep the weaving going full 48 hr. Spain's domestic consumption, including the wants of its colonies, is from 90,000 to 100,000 metric tons of cloth per annum which is about one 48-hr.-shift production for the 84,000 looms.

The seat of the textile industry is Barcelona in the province of Catalunia. Approximately 60% of the mills are located in that province—the balance being spread throughout the country, from the northeast provinces down to the province of Andalucia, which contains the city of Seville, and over to Malaga on the Mediterranean to the Southeast where the largest individual mill, Industriales Halaguenas, containing 1,200 looms, is located.

The mills are grouped as follows: 170 spinning mills, 960 weaving mills, 100 mills that both spin and weave, 110 mills that weave and finish, and 127 finishing plants. In addition to these, there are a number of yarn mills which knit as well as weave a part of their product and in many cases finish also. These would probably add up to another 60 mills. It will be seen that by comparison with the American standard, the great majority of these mills are small. Among the spinning plants, there is only one containing 60,000 spindles, while the average is about 7,000 spindles per mill. Weaving mills range up to 1,200 looms in the largest mill, with an average of only 70 looms per mill. The total finishing capacity per 48-hr. week is about 12,000,000 yd.

Yarn mill equipment is at least 50% British made, the balance being Ger-

man, Swiss, or Spanish. The last named is more or less copied after British machinery. Spain has been handicapped during the last nine years by her own civil war as well as by World War II. Supplies and repair parts have been impossible to secure, and hence equipment at the end of the war was probably in a much poorer shape than normally. Card clothing, particularly, was in bad condition. It is interesting to note that most of the Spanish spinning, no matter what the age, is equipped with Casablancas long-draft attachments. About 10 to 12% of this spinning equipment operates on combed yarns. This latter division, in normal times, operates principally on Egyptian long-staple cotton for sewing thread, the fish-net trade (which is sizeable), special army goods, and the better shirting fabrics.

Of the 84,000 looms, the majority are of the old British hand-changing, overpick type; most of the Spanish-built looms, which are copied after the British, are of the same type. Other looms are German, Swiss, and Czechoslovakian. There are a number of Spanish textile-machinery concerns which build card-room and spinning-room equipment as well as looms; but they were virtually at a standstill during the war years, and have been slowly getting into production. Demand was sufficient to book them ahead for several years. Loom builders seem to be a little farther advanced than spinning-mill-equipment builders. In the summer of 1945 at a mechanical exhibition in Barcelona, there were exhibits of four different types of automatic looms. Three were patterned more or less after the British Northrop, and the fourth was a type of automatic box loom.

LABOR PRACTICES. All salaries and wages have ceilings by the Department of Labor and are further regulated by a zoning plan. In Zone No. 1, the city areas, wages are higher than in Zone No. 2, the semi-rural areas; and both are higher than Zone No. 3, which includes the rural areas.

There is an advanced program of social security and welfare in effect, which includes various benefits as follows:

1. Family subsidies amounting to 6% of the wages paid. The mill pays 5% and the employee pays 1%.

2. Retirement and old age pensions, effective after 64 years of age amount to 3% of wages. The mill pays all.

3. Maternity benefits provide for the mill to pay a small amount to the mother six weeks before and after confinement. Mill pays all.

4. Bonus to heads of families is divided among qualified workers on a point system in relation to the size of the family and amounts to 10% of the wages earned during the period selected. Mill pays all.

5. Employees' liability and sick benefits amount to 2%, of which the mill pays 1½% and the employee ½%.

6. Syndicate tax of 2%, of which the mill pays 1½% and the employee ½%. All industries are controlled by government syndicates.

7. All weekly employees get a week's vacation with pay and an extra week's bonus at Christmas time. Executives paid by the month receive a month's vacation with pay and a month's bonus at Christmas time. Employees are also paid for all holidays of which there are between 20 and 30 per year, depending upon the section of the country. During the recent war years, since wages and salaries were stationary and ceilinged as mentioned, everyone has been receiving an extra bonus of 20% to offset the high cost of living.

Once an employee has been hired, he must have a minimum of three days' pay per week as long as the company operates. This precludes any spreading of jobs; and for this reason, the weaver handles only 12 to 14 automatic looms on sheeting and print cloths. There is one exception, the HYTSA mill, where special government permission was obtained for larger jobs, with 20 looms per weaver on sheetings and print cloths.

This is the newest and most modern mill in the country. It was completed in 1943 and equipped 100% with latest type Swiss machinery. It is by far the best cotton mill in Spain and stacks up, as far as equipment is concerned, with any mill in the United States. The name of the mill, HYTSA are the initials for the Spanish of Spinning & Weaving Mills, Inc., of Sevilla. It contains 20,160 spindles and 400 looms, together with a complete finishing plant. The mill buildings are of the latest Spanish construction with 1-story saw-tooth roof weave shed, and extra space provided so that both yarn and weaving equipment can be doubled when equipment is available. When the author inspected this mill, the management seemed most interested in securing American equipment when and if it could be procured. The mill contains:

Textile centers of Spain are in coastal areas, and widely separated from Madrid, the capital.

Rieter bale breakers
Rieter breakers and pickers
70 Rieter cards, 12-in. delivery
16 Rieter, two-process drawing frames, 7 deliveries per frame
4 Rieter slubbers, 88 spindles each, long draft
12 Rieter intermediates, 132 spindles each, long draft
42 Rieter spinning frames, 480 spindles each
4 Rieter twisters, 40 spindles each
14 Schweiter cone winders
9 Schweiter automatic filling quillers
2 Ruti high-speed warpers
2 Ruti slashers

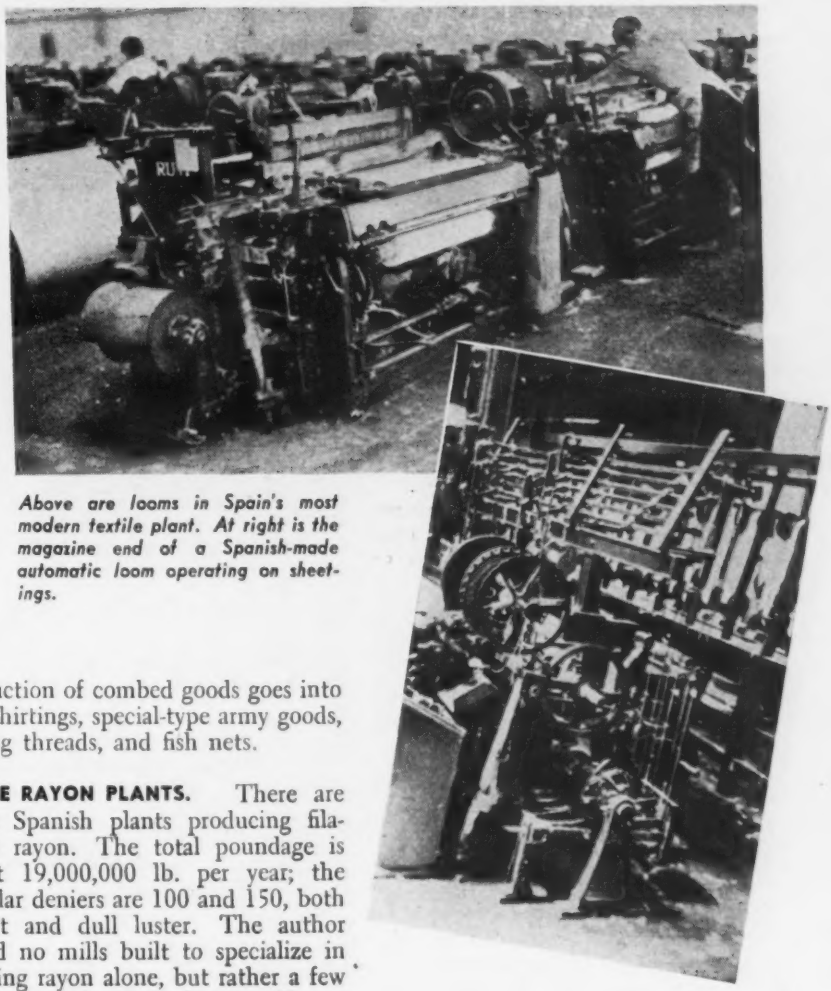
Yarn spun is 14s to 46s Catalan count. Catalan yarn numbers are 0.0435% coarser than English count.

The 400 looms in this mill are all Ruti automatic (see illustration) and are 1- to 2½-meter reed space. As stated, in this mill one weaver operates 20 1-meter looms, with a battery hand to every 40 looms. Looms of that width operate 186 picks per minute. This is perhaps the only Spanish mill that concentrates on a few types of cloth. There were six different types running in the entire mill when the author visited it.

The finishing plant contains all Swiss machinery for dyeing, finishing, and piece-goods bleaching. There are no Sanforizing machines or anything else of that sort, but instead all cloths are generally finished slowly and without much tension.

The popular cloths produced in Spain in order of their importance are as follows:

First comes utility-type apparel cloths; twills, both gray and yarn dyed, for coverall-type garments universally used by all classes of workers. Next are cottonades, exceptionally well-made cloths, using 2-ply warp and in most cases 2-ply filling. Towels are woven from bleached yarn and are sold without any further finishing except, of course, the customary cutting and hemming. Sheets and pillow cases are made both from bleached yarns and from gray yarns later bleached in the piece. Print cloths are in large production, but differ in construction from the popular American types. Woven stripes and checks, yarn-dyed principally with direct or sulphur colors, are in large production and are used mainly in southern Spain and the African and island colonies. Heavy napped goods are used in many sections by the lower-income groups for outer garments; they are made from 2-ply yarns and are piece-dyed or printed. A small production of combed goods goes into fine shirtings, special-type army goods, sewing threads, and fish nets.



Above are looms in Spain's most modern textile plant. At right is the magazine end of a Spanish-made automatic loom operating on sheetings.

THREE RAYON PLANTS. There are three Spanish plants producing filament rayon. The total poundage is about 19,000,000 lb. per year; the popular deniers are 100 and 150, both bright and dull luster. The author found no mills built to specialize in weaving rayon alone, but rather a few looms in each of the larger mills are set aside to handle this yarn. Rayon companies were not producing rayon staple, although it was stated that two or three plants had been started early in World War II but had not been completed by the close of hostilities because they were waiting for German machinery which never was delivered. Prior to the war, while considerable rayon staple was spun in Spain, the fiber was imported principally from Italy and France.

Spain raises about 35,000 metric tons of raw wool per year and of this 35% is merino and 65% of low grade. The wool is mainly used for blankets and ponchos. Woolen mills are able to handle this poundage on 70% of one shift or four days per week running time, which produces about the yardage needed for domestic consumption. The apparent excess of woolen-mill production is due to the fact that during the Spanish civil war the textile sections were cut off and in the hands of the Republicans which necessitated the building of a number of mills in the western section of the country by Franco's regime.

While Spanish textile wages are considerably less than they are here, the cost of production of comparable cloths is higher in Spain than in the United States. This situation is due to government taxes on raw cotton which is imported from the United States, Brazil, and Egypt; plus the small work load per operative and the low percentage of efficiency.

There is not much American textile machinery to be seen anywhere in Spain, with the exception of winding equipment produced by Universal Winding Co. There was hardly a Spanish mill of any size, however, that was not anxious to re-equip with modern machinery, and there was much interest shown in American textile machinery of all sorts. Representatives of British textile machinery concerns were in the country soliciting orders immediately after the cessation of hostilities in 1945.

EDITOR'S NOTE: *The author of this sketch of the Spanish textile industry headed a mission sent over by United States Commercial Co. to survey the textile production situation. During the contacts there, which extended over an 18-month period, the author visited a large part of the mills in Spain and completely cataloged at least 25% of them.*

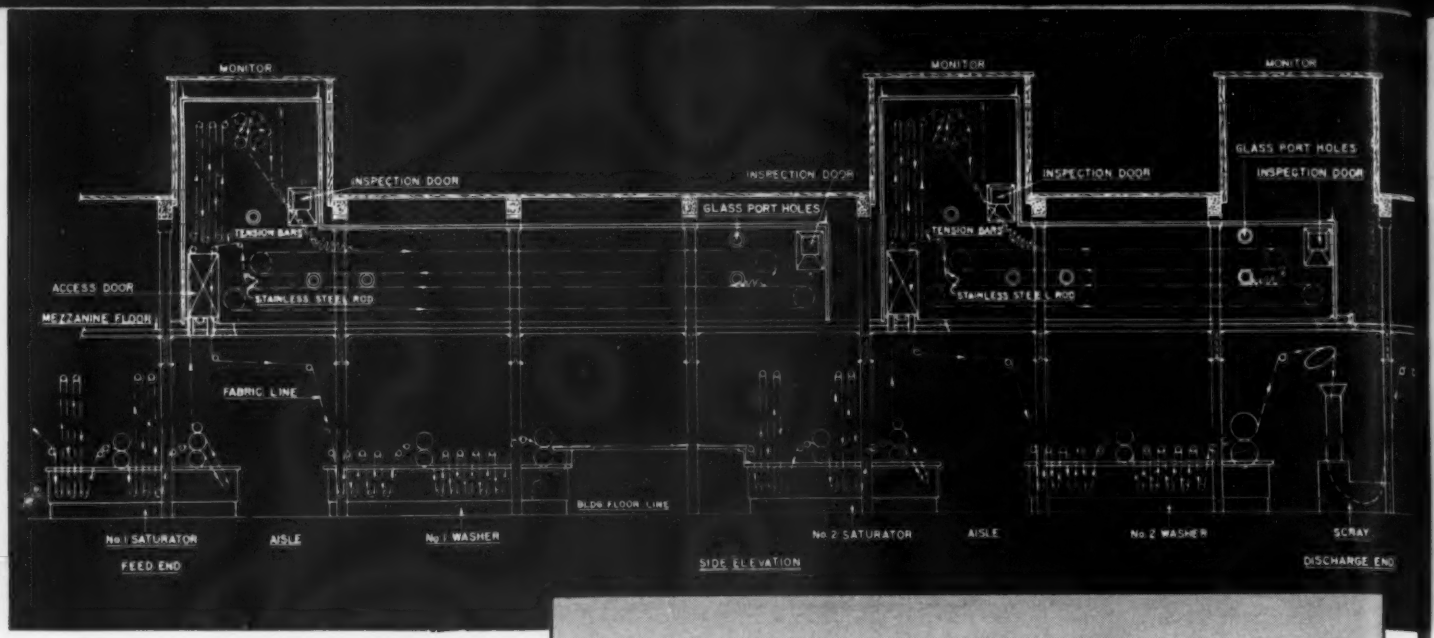


Fig. 1. Layout of double-steamer system now in operation shows the two open-width units, with associated saturators and washers on the lower level.

CONVEYOR STEAMER Speeds Preparation of Cotton Goods

HIGHLIGHTS: *Single-conveyor steamer superseded by double type — Better results with same use of floor space — Caustic steaming on single unit prepares goods for dark-shade dyeing without further treatment — Double-steamer system prepares goods for whites or light shades.*

By C. NORRIS RABOLD, Consulting Editor, TEXTILE WORLD

THE OPEN-WIDTH, conveyor-type steamer was introduced to the textile industry by the Mathieson Alkali Works in the early 1940s. The first units contained only a single conveyor which traveled at a low rate of speed. The cloth was piled on this conveyor and entered and left the steaming chamber at speeds of 50 to 100 yd. a min. Depending upon the weight of the cloth and the speed of the conveyor, the cloth remained in the steamer from ½ to 1 hr., although usually ½ hr. was sufficient. The cloth was supported in the steamer by endless cotton ropes, spaced some 10 in. apart so that the steam atmosphere could penetrate throughout the layers of cloth. [See "Steam Process Scours Cotton Continuously" by P. J. Ariente, TEXTILE WORLD, July, 1945]

(*Continued on page* 186)

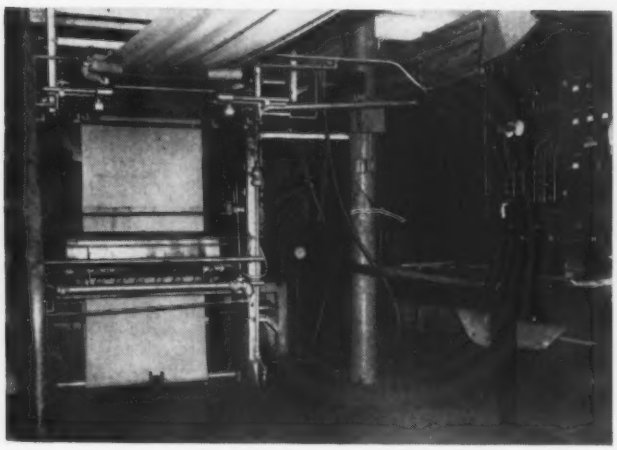


Fig. 2. Cloth openers and a two-burner vertical singer are located directly ahead of caustic saturator. On the right is the control panel where the master controls for the steamer range and auxiliary equipment are located.

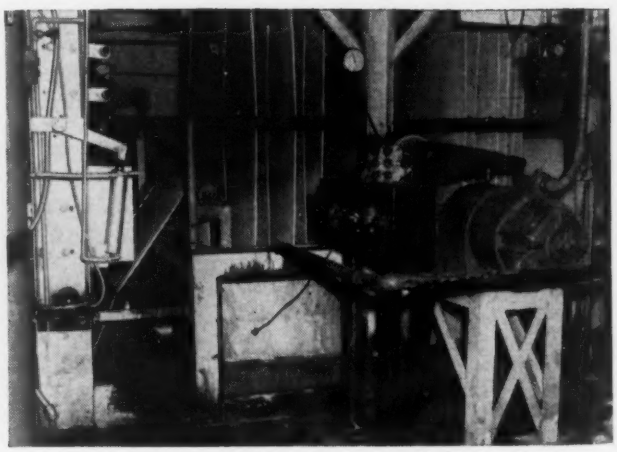


Fig. 3. This view of caustic saturator shows skying arrangement which gives the dry cloth ample time for full saturation. Individual-motor-driven pressure controls for squeeze rolls are shown in foreground.

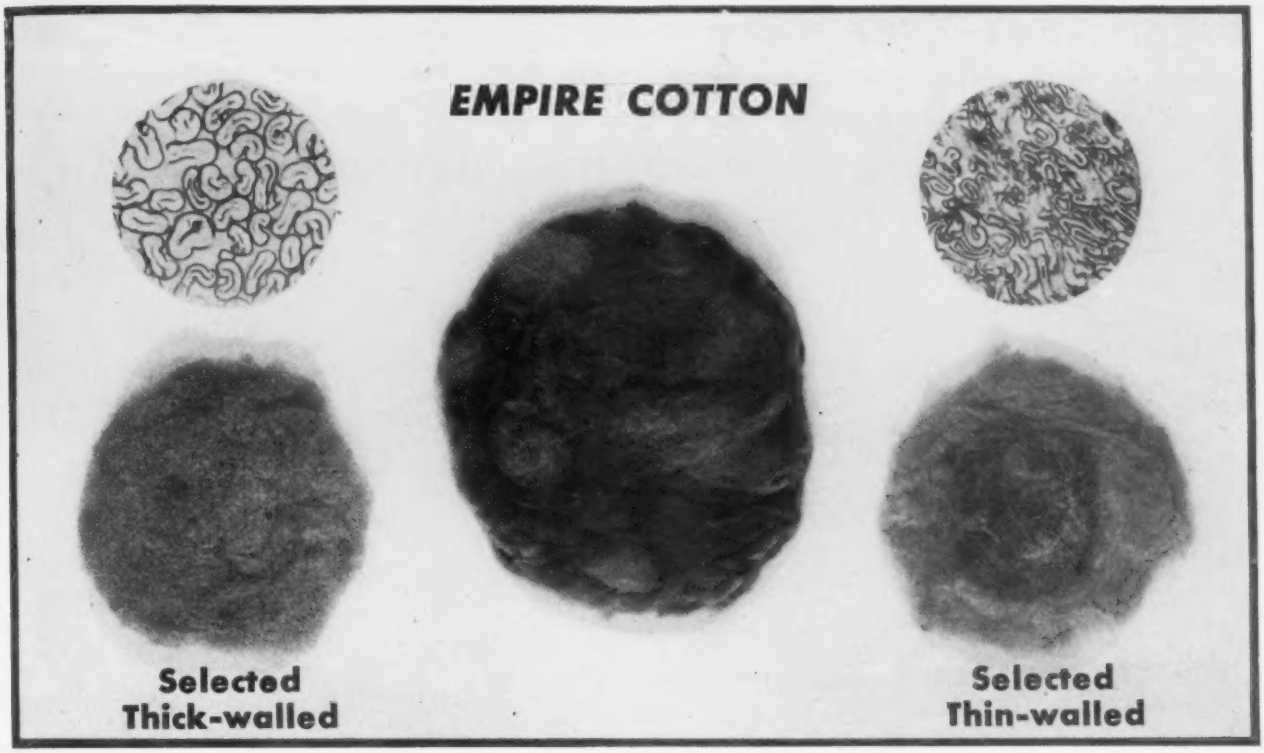


Fig. 1. Thick- and thin-walled cottons, identified by differential dyeing, are checked by cross sections (Empire variety).

New Dye Technique Shows "MATURITY" OF COTTON

HIGHLIGHTS: *Manufacturing and dyeing characteristics of cotton, and the course of development of fibers in the boll, can be shown by special differential dyeing of thick- and thin-walled (mature and immature) fibers—The test is easily made in a laboratory or dyehouse—Identifies neppy material.*

By CHARLES F. GOLDTHWAIT, HERBERT O. SMITH, and MARY P. BARNETT*

Southern Regional Research Laboratory,† New Orleans, La.

A TECHNIQUE of direct dyeing with a particular combination of two dyes of contrasting color and of different dyeing properties has been found very effective for the identification of thin-walled, or immature, cotton fibers—the term immature being employed here, as in common usage, to denote relatively thin-walled fibers as contrasted to mature or thick-walled fibers, with no implication as to the reason for the difference in thickness.

The simplicity of the test, together with the extreme color contrast (Fig. 1) frequently obtained by this method, which may be called "differential dyeing," suggests a wide field of usefulness; and such dyeing has already given striking results at the Southern Regional Research Laboratory in a number of applications. It has demonstrated visually the progressive development of cotton lint on the seed (Fig. 2.), has shown clearly the relative amounts and the locations of thin-walled fibers on seeds, and has assisted in the selection of fibers from seeds for special studies. Such dyeing has shown the relative amounts of immature cotton in admixture with cotton of normal maturity, as found in classers' samples, and has been employed as a check on sampling for laboratory purposes. It has been employed in identifying cotton that would cause trouble in manufacturing or in commercial dyeing (Fig. 3) and has been used in selecting cotton of special properties for manufacturing special fabrics. The dyes have colored neps distinctively and may prove of value in studying their occurrence and nature (Fig. 4).

Experience thus indicates that details of the procedure should be made available even though the results obtainable have not yet been fully explained, and though the technique may be subject to improvement.

IMMATURITY AFFECTS DYEING. The observation has been made again

* Resigned Sept. 20, 1946.
† One of the laboratories of the Bureau of Agricultural & Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture.

Development of Cotton Fiber Shown by Differential Dyeing

Increase in degree of maturity is shown by the increasing number of red-dyed fibers.

Dyeing properties change *as cotton develops in the boll (Fig. 2). Green-dyeing thin-walled fibers color red as the walls thicken and the fibers mature (Mexican Big Boll).*

and again in practical dyeing, and noted in the literature, that very immature cotton does not dye normally. Actually, however, little has since been added to the comments of Crum[2] made in 1849. Crum, studying cotton at different stages from raw stock to dyed cloth, identified tangled bits which failed to color with several dyestuffs as small groups of extremely thin-walled fibers, and thus was in effect describing neps (although he did not use that term) as well as their lack of response to dyeing with colors that were in use before the synthesis of coal-tar dyes. The same lack of response has since become widely recognized, particularly with the direct cotton colors, most of which leave the neps showing as light or white specks.

Implications have been found in the literature[1] that fibers of somewhat greater wall thickness than found in neps tend to dye to an intermediate depth between that of the extremely thin-walled (neppy) material and that of normal or thick-walled cotton. Although there has been frequent reference to dyeing behavior, there seems to have been no development of a usable test by direct dyeing, to distinguish thin-walled fibers, other than neps, from thick-walled fibers.

***Differential dyeing** has application in cotton manufacturing (Fig. 3). Immature, thin-walled cotton, which dyed green, caused trouble in manufacturing and dyeing. Mature, thick-walled cotton, which dyed red, ran well. Note the great difference when used separately as warp and filling, and piece dyed.*

DIFFERENTIAL DYEING PROCEDURE. For cotton in the natural or gray state, to which this discussion is limited, the procedure is that of direct dyeing carried out with emphasis on precautions to insure complete access of all the cotton present to the dyebath which contains an excess of dyestuff throughout the dyeing.

Samples of 3 grams each are usually suitable when dyeing raw cotton. To promote uniformity of treatment and to avoid the mixing of loose fibers or of fibers attached to seeds, the cotton should be enclosed in open mesh gauze (preferably bleached, of 28 x 24 thread count) and, if necessary, sewn into place lightly so that it will remain in a thin flat layer. After weighing, followed by wetting thoroughly in boiling distilled water, the cotton is entered into a boiling bath, made up with distilled water to 40 times the weight of cotton (gauze plus samples), containing 1.2% Diphenyl Fast Red 5BL Supra I (Geigy) (Color Index No. 278) and 2.8% Chlorantine Fast Green BLL (Ciba) (no other manufacturer known), calculated on the weight of all the cotton.

After dyeing for 15 min. at the boil, the cotton is lifted out and 2½% of its weight of C.P. sodium chloride is stirred into the dyebath. The cotton is re-entered for 15 minutes, then lifted again and a second 2½% portion of sodium chloride added. The dyeing proceeds at the boil to a total of 45 minutes when the cotton is lifted, drained, and washed well in two changes of cold water (distilled, unless the local tap water is found satisfactory) in the proportion of 50 parts to 1 of cotton. Excess water is squeezed out and the dyeings are dipped into vigorously boiling water (50:1) for just 30 seconds, with stirring for uniform treatment, then lifted, drained, and washed again in cold water. Hot washing is not in accordance with usual direct dyeing practice and, as used here, is really differential stripping. It removes excess red but relatively little green, thus tending to eliminate grayness and resulting in more clearly defined colors, especially in a clearer green.

A simple direct dyeing unmodified by the hot water stripping may be preferred for some purposes. It can be made with the same dyes, but in the proportion of 0.7% of the red and 3.3% of the green, as used earlier very extensively for differential dyeing, by the same method omitting the special hot washing. While such direct dyeings were very striking and useful, better contrasts resulted when inadvertently some of them were washed with warmer water than usual. In following up this observation, the dye proportion, given above, 1.2:2.8, with the dip in hot water, was found to give the best results so far obtained. Dyeings employing this proportion, however, are initially much redder than the earlier ones and are not suitable for observation directly, without the hot washing.

After final wringing the dyeings are allowed to dry in the open air or with moderate heat, particular care being taken to avoid conditions which might cause migration of the dyes to the outside. Removal of the gauze from loose

cotton and fluffing the sample before drying help prevent unevenness from this source. Thick-walled (mature) fibers dye definitely red, and thin-walled fibers (commonly considered immature) dye a distinct green so that two very different colors result.

Dyeings must always be made in exactly the same way in order to be as nearly repeatable as possible and for results to be consistent from one dyeing to another. This is especially important here, where the two dyes used are successful because they do not work well together in the dyer's sense but each tends to go its own way.

In order to be compared critically, different cottons should be dyed together; that is, in the same dyebath at the same time, and washed under the same conditions, all at once if not too bulky. When it is necessary to make dyeings at different times for ultimate comparison, all baths ought to reach the same state of exhaustion and the dyed cotton ought to be washed according to an exact procedure. Since the dyeing and washing cannot always be repeated exactly, especially if cottons of unknown properties are being tested, known control samples can be included so as to indicate whether there is undue deviation from normal.

The dyeing procedures described are not necessarily the last word—it is obviously impracticable to test any large proportion of the vast number of combinations of direct cotton colors taken two at a time or the great number of possible variations in dyeing each combination. Many pairs of commercial dyes have been tried, however, mainly on the basis of contrasting color and of known or suspected differences in dyeing properties, and no other combination has yet been found with nearly the contrast of the green-red formula.

It is quite possible that variations of the technique may be found to have advantages for particular kinds of cotton or for other special conditions. The dyes have already been applied in other ways than indicated, for example, in laboratory dye jigs on long strips of gray cloth to show differences in the behavior of different cottons, and to emphasize such defects as filling bars and neps.

The dyestuff combination used in differential dyeing is known to be sensitive to influences other than differences in wall thickness of cotton. The present discussion, intended to apply to cotton in its ordinary natural state—that is, without purification, appreciable degradation, or other modifying treatment—does not take these other influences into account.

FIBER DEVELOPMENT ON SEED. Dyeing cotton while still on the seed revealed not only the presence of thin-walled fibers, but showed their relative amounts and locations so successfully as to suggest the dyeing of cotton on seeds taken from unopened bolls at different stages of growth. Results obtainable in such dyeings are illustrated by the progressive series of Fig. 2 where the number of days between flowering and picking is indicated for each seed. The fibers on seeds obtained through the twenty-ninth day, when there was still very little secondary wall thickening, were dyed almost completely green, but fuzz hairs were already colored red because their walls thicken earlier than those of the lint. By the thirty-second day, red definitely appeared in the fibers on the seed showing that their walls were beginning to thicken. After this time the total amount of red increased progressively. Finally, cotton from a boll which had opened normally dyed nearly all red, corresponding to the development of thick fiber walls. When checked with the microscope, the color changes were seen to follow the thickening of the wall. The fibers which failed to develop fully on the older seeds are mainly on the chalazal ends furthest from their points of attachment to the plant, which is recognized as a frequent location for underdeveloped fibers[3, 4].

***Nep-forming fibers** are seen in seed cotton. (Fig. 4). Differential dyeing distinguished the nep-forming type of fiber, as confirmed by longitudinal and cross-sectional views.*

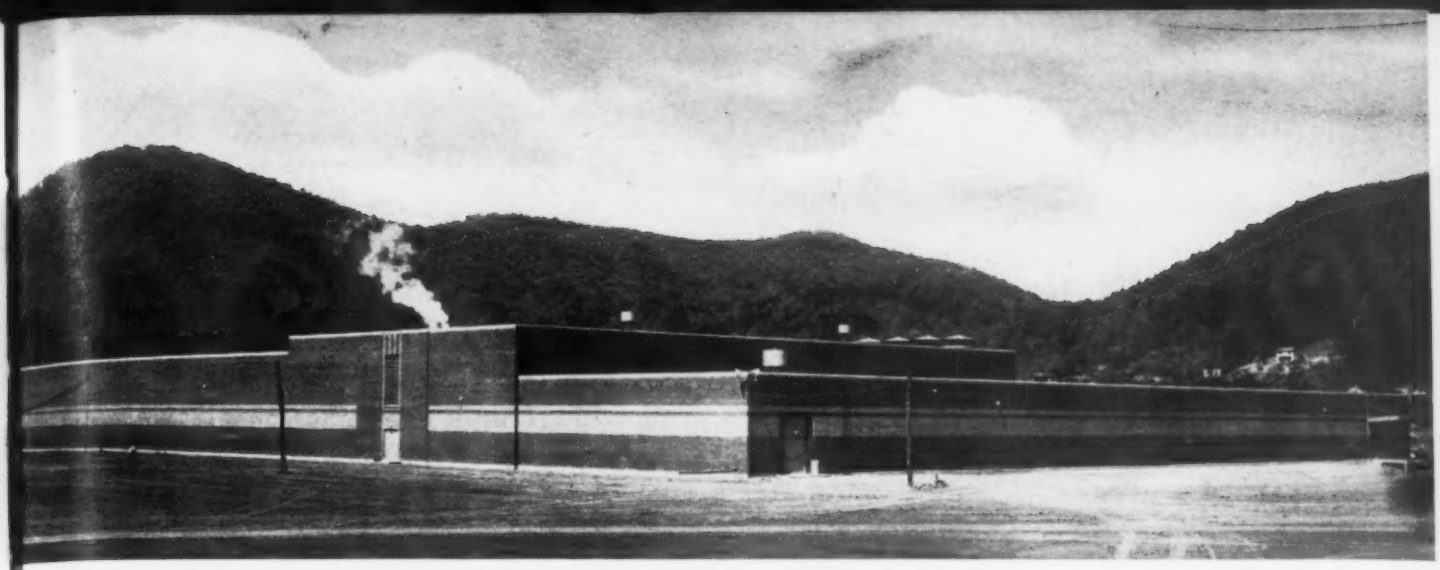
Red fibers with green tips, representing another form of incomplete development, have been found after dyeing in cotton on seeds taken from bolls that opened naturally. Hence such fibers may occur in commercial cottons, and have, in fact, been found after differential dyeing. Sometimes both base and tip are green (thin-walled) and the middle of the fiber red (thick-walled).

Extremely thin-walled fibers, such as would be expected to form neps, can frequently be seen if present in cotton dyed on the seed (Fig. 4) or in bulk. They often have a characteristic appearance, sometimes adhering together as flat glazed sheets, and, while typically of a green tint, may look nearly white. The differential dyeing may thus serve as a convenient guide for predicting the relative amount of nep formation to be expected from an unknown cotton.

In several instances, neps in cloth have been tinted a distinct green. Although this special coloring may offer no particular advantage over the use of other direct dyes which make neps show plainly as "resisted" white specks, it may be helpful in their closer study. For example, if any neps are formed from mature fibers during manufacturing, or if bits of seed coat with fuzz hairs attached (bearded motes) are present, both should dye red and be easily distinguishable from the green-dyed neps consisting of very thin-walled fibers. Red-dyed bits of seed coat with fuzz have been found; but no red-dyed neps in the few pieces of cloth examined.

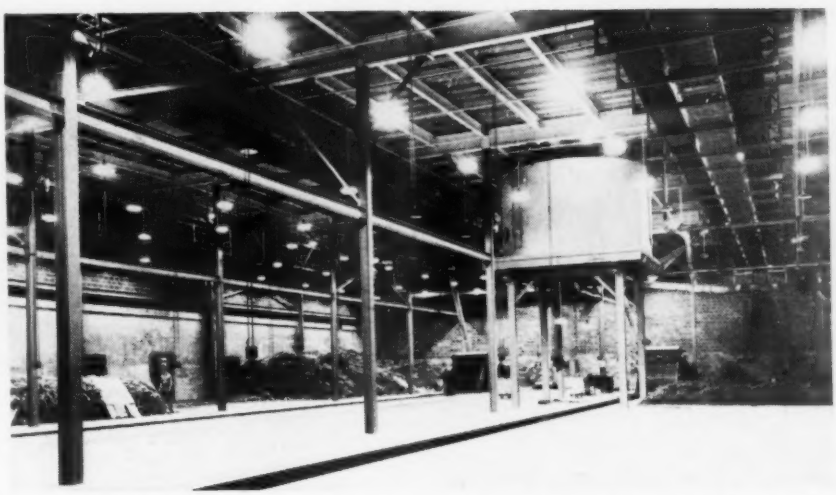
COMPARISON OF COTTONS. Comparisons can easily be made between cottons of different variety or growth, if dyed all at once in one dyebath and carefully hot-washed. As typical examples: An Indian cotton came out reddest with a distinct but relatively small proportion of green due largely to green ends of fibers which were mostly red. A Rowden sample, not so coarse and thick-walled as the Indian, was not quite so bright a red and showed a slightly larger proportion of green, due to immature fibers. An American Egyptian cotton (SxP), and two cottons of Egyptian growth had many distinctly red fibers but large, although differing, amounts of green. Two Sea Island samples had still larger amounts of green, indi-

(Continued on page 201)

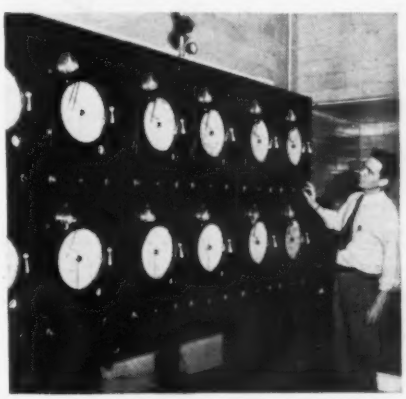


Exterior of spinning mill and dyehouse addition to the Blueridge plant of James Lees & Sons Co., at Glasgow, Va., is red brick with gray used to add a modern note and to simulate window lines.

New Lees Mill Shows Advanced ENGINEERING



This blending room is housed in the highest part of the new building shown above. At the top of the room are three sets of built-in conveyors for delivering stock to the blending-room floor. The two lines in the floor carry the mixed wool to the blending pickers, from which it is pneumatically carried to storage bins for the cards. The tank seen is one of several used to store heated water for use in the adjoining dyehouse. Water pumped from wells at 56° F. is warmed in the humidification system to 70° F. and then to 130° F. as it cools steam exhausted from turbine used to run air-conditioning fans. For the dyehouse, water is stored at 185° F. ready for use.



One of several sets of instrument panels used in the new Lees dyehouse, this panel is in the dyer's office and gives him a continual check and record of the stock dyeing being carried out (see next page). These are Taylor instruments as are others in the dyehouse for controlling temperature (Fulscope type). Pressure-controlling instruments, not shown, are Foxboro. Tile walls seen here and in following pictures were selected because they are clean and never need painting.

HIGHLIGHTS: *Spinning room and dyehouse represent $3,500,000 investment—Latest ideas used in conditioning, lighting, materials handling, instrumentation — Tunnels are part of air system and are used also to carry utilities—Hung ceiling, parquet floors, and recessed facilities are outstanding—Minimum maintenance is one aim of engineers.*

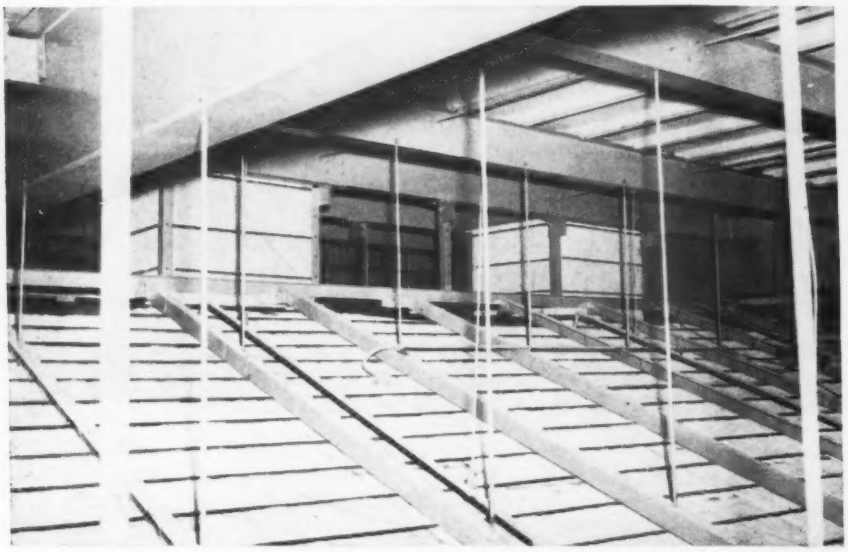
THE NEW $3,500,000 spinning room and dyehouse which have been added to the Blueridge carpet-weaving mill of James Lees & Sons Co., in Glasgow, Va., contain some of the most advanced engineering features to be found in a manufacturing plant, some of which can be seen in the photographs on this and the following two pages.

Architect and engineer for Lees was the Ballinger Co., general contractor was Daniel Construction Co., and Lees' chief engineer is Robert Oberholtzer. The addition has resulted in an area of 17 acres under one roof; the view above shows only the new 450 x 309-ft. building, to the left of which is the weave room begun in 1935.

Wert Faulkner, former football coach at nearby Virginia Military In-

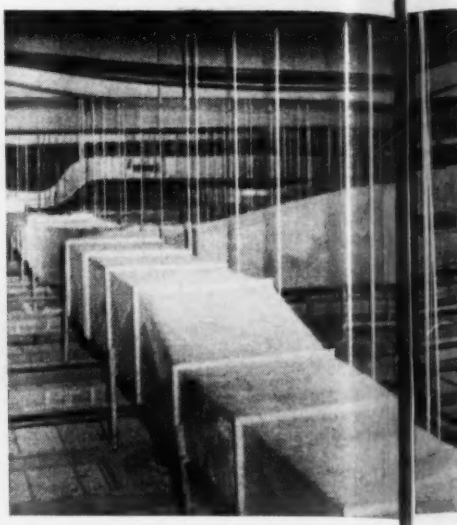
stitute, is general manager of the plant. President of the Lees company, which also has plants in Bridgeport, Carlisle, and Philadelphia, all in Pennsylvania, is Joseph L. Eastwick.

The Glasgow plant is a major step in a program based on the belief of the Lees company that industry should be ruralized. The mill maintains no village, but the management encourages its workers to continue to live on surrounding farms and towns from which they can travel to the plant by special buses or private cars.



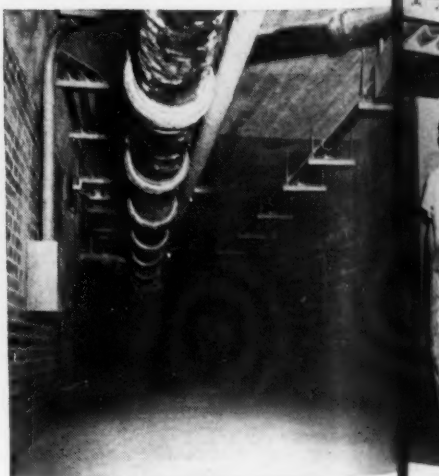
The hung ceiling *over the new Lees 56x126-ft. skein-dyeing department is curved from the walls to the square housings shown here. The outlets, only two of which are in this view, are expected to carry vapors out of the skein dyehouse by natural draft; but, if necessary, exhaust fans can easily be installed. The dyehouse side of this ceiling is smooth and free from obstructions which might cause condensation and dripping. The area shown is kept quite warm at all times so that condensation will not form on the ceiling below.*

Stock dyeing *is carried out in an area adjacent to skein dyeing. Here the ceiling is flat. Note the tracks for handling stock and the hanger bases that are ready for additional tracks. The floor is made of acid-resisting tile, and around each stock-dyeing machine is a curb to keep liquor off the surrounding floor. Hoists are traveling electric, operated from push buttons. Air locks between the dyehouse and the adjacent spinning room prevent moist air from the dyehouse from affecting the air conditions of the spinning room.*



This area *above the spinning room proper shows how the ceiling is hung. In this space, air conditioning, lighting, public-address, and sprinkler-system facilities are housed. Underneath the Carrier duct-work in the foreground can be seen an air outlet to the*

The hung ceiling *seen from the 297x168-ft. spinning room shows recessed fluorescent lighting, sprinkler heads, air outlets (round openings), and public address speakers*



A Room Within a Room

The spinning room of the Blueridge division of James Lees & Sons Co. is virtually a room within a room as can be seen in these photographs.

The huge ducts in the hung ceiling above and the tunnels below permit the handling of huge volumes of conditioned air. The air is cooled (by means of well-water and evaporation) or heated as needed and is filtered. Measurement of pressure drop through the filters tells when they need to be cleaned.

Engineered into the plant have been excellent working conditions and production facilities as well as features to minimize maintenance costs. The photos on these pages attest the attractive appearance of the plant inside and out. The entire plant uses the Dupont "Color Conditioning" system for three-dimensional seeing, piping identification, safety, etc.

spinning-room ceiling. Above, not visible in this photograph but clearly seen in two preceding pictures are, precast Hadyte concrete slabs which form the roof. Above the slabs are glass insulation and a tar-and-gravel outer surface.

(square projections). The ceiling is sound absorbing. Not visible in the tiled walls shown at the rear are recessed receptacles for fire hose and other equipment.

***The parquet floor** visible here at the twisters is laid on top of concrete, felt, and mastic. Should small sections be damaged, they can easily be replaced. Note in this picture and in the view of the spinning room the clear areas from floor to ceiling, blocked only by a few steel columns. Power to the motors comes up through the floor from power lines in tunnels shown in the pictures below.*

***Tunnels below** the spinning room carry return air for the air-conditioning system and also house drains, power lines, and water pipes. The smaller tunnel, at the right, is the one from which is emerging the workman in the picture at the left. At the far end of the small tunnel are still smaller ones. As the tunnels converge, they become larger and larger. One area (where the camera was standing as the view on the left was taken) is large enough to house an air-pumping station.*

HOW THE NEW LABOR LAW AFFECTS TEXTILE MILLS

I. What you may do.
II. What you may not do.
III. What your employees may do.
IV. What unions may not do.
V. What unions must do.
VI. Penalties for violation.
VII. Powers of the National Labor Relations Board.
VIII. Powers of the court.
IX. Special provision.

NEW LABOR LAW
Changes Rights and Duties

By BENJAMIN WERNE

Graduate School of Business Administration N. Y. U.; Member of New York Bar

IN MANY CASES involving textile plants, the National Labor Relations Board has heretofore taken a very narrow view of what management could do, a very broad view of the economic restraint laws could impose upon a plant in the name of self organization; and the courts have indicated their utter impotence in coping with the union's disregard of its contractual obligations.

As a result of the new Taft-Hartley labor law, management has vastly increased rights, unions have specific responsibilities, and board and court are under a positive duty to insure the equitable administration of a law that was once singularly one-sided.

The Labor-Management Relations Act of 1947, popularly known as the Taft-Hartley Law, amends the Wagner Act and crystallizes the new labor policy of the nation, a policy which seeks to equalize bargaining power and to correct some of the serious abuses to which employers and employees have been subjected. It imposes responsibility on unions as well as on employers and legislates against such strikes as have on a score of occasions imperiled the nation's health as well as its entire economy. Most of the old law is perpetuated.

Among the outstanding features of the new law are the following:

1. *The authority of the National Board is greatly increased.*
2. *The scope of judicial review is materially extended.*
3. *Injunctive power may be invoked to halt for 80 days strikes threatening the public health or safety.*
4. *Many internal union affairs are placed under closer federal scrutiny.*
5. *Closed shop is banned.*
6. *Secondary boycotts, jurisdictional strikes, and featherbedding walkouts are curbed.*

Most of the law will not take effect until 60 days after its enactment. The following are exceptions: Certifications are not affected until a year from the date of certification; closed shop, union shop, and other forms of union-security contracts in operation when the law was passed are not affected until expiration or renewal; union-security contracts signed within 60 days of the law's passage and running for a period of not more than a year are not affected until expiration or renewal. Conduct prior to the enactment of the law may not be subject to prosecution under the new law.

The law is here analyzed to give you at a glance the highlights of what your rights, duties, and responsibilities are in the light of the many provisions of the Wagner Act as interpreted by the courts in addition to the new sections.

I. What you may do under the new law

YOU MAY:

1. speak freely to your employees.

You may express views, arguments, or opinions or disseminate them, whether in written, printed, graphic, or visual form, provided such expression contains no threat of reprisal or force or promise of benefit and is in no wise threatening or coercive.

2. hire, suspend, and discharge, provided you do not discriminate against anyone for his or her labor activities.

3. petition the National Labor Relations Board to hold an election when one or more individuals or labor organizations have presented to you a claim to be recognized as the representative.

The Board shall not direct an election in any bargaining unit within which, in the preceding 12-month period, a valid election shall have been held.

Employees out on strike who are not entitled to reinstatement shall not be eligible to vote in an election.

4. sue a labor organization for violating your collective labor contract.

Either party may sue in a District Court of the United States (regardless of the requirements for federal jurisdiction, i.e., diversity of citizenship or amount of recovery sought), provided the employer was in an industry affecting commerce or the labor organization representing the employees was in such an industry.

Any such labor organization may sue or be sued as an entity and in behalf of the employees whom it represents. Any money judgment against a labor organization shall be enforceable only against the organization as an entity and against its assets, and shall not be enforceable against any individual member or his assets. In determining whether any person is acting as an "agent" of another person so as to make such other person responsible for his acts, the question of whether the specific acts performed were actually authorized or subsequently ratified shall not be controlling.

5. sue those responsible for damages.

If you are injured in your business or property by reason of a boycott or a jurisdictional dispute, in any court having jurisdiction of the parties, you may sue to recover the damages sustained by you and the cost of the suit.

6. refuse to bargain with a foreman's union.

Although nothing in this act would prevent a supervisor from joining a union or an

employer from bargaining with a foreman's union, you are not compelled to do so.

II. What you may not do under the new law

YOU MAY NOT:

1. **interfere with, restrain, or coerce employees in the exercise of their rights as defined in the law (see section III).**
2. **dominate or interfere with the formation or administration of any labor organization or contribute financial or other support to it.**

The Board may issue rules, however, giving the employer the right to have his employees confer with him during working hours without loss of time or pay.

3. **discriminate in regard to hire or tenure of employment or in regard to any term or condition of employment to encourage or discourage membership in any labor organization.**

An employer may, however, enter into an agreement with a labor organization, requiring, as a condition of employment, membership therein on or after the 30th day following the beginning of such employment or the effective date of such agreement, whichever is the later, provided (a) such labor organization is the representative of the employees in the appropriate unit covered by such agreement when made; or (b) following the most recent election held, the Board shall have certified that at least a majority of the employees eligible to vote in such election have voted to authorize such labor organization to make such an agreement.

4. **discharge or otherwise discriminate against an employee because he has filed charges or given testimony under the act.**
5. **refuse to bargain collectively with the representatives of your employees.**
6. **make contributions to welfare fund—**

Unless (a) the detailed basis on which such payments are to be made is specified in a written agreement with you; (b) employees and employers are equally represented in the administration of such fund, together with such neutral persons as the representatives of both sides may agree upon; (c) in the event the employer and employee groups deadlock, such agreement provides that the two groups shall agree on an impartial umpire to decide such dispute or provides for one to be appointed by the District Court of the U. S.; (d) the contract contains a provision for an annual audit of the trust fund; (e) a statement of the results of which shall be available for inspection by interested persons at the principal office of the trust fund and at such other places as may be designated in such written agreement; (f) such payments as are intended to be used for the purpose of providing pensions or annuities for employees are made a separate trust which provides that the funds held therein cannot be used for any purpose other than paying such pensions or annuities.

7. **pay or deliver or agree to pay or deliver any money or other thing of value to any representative of your employees who are employed in an industry affecting commerce.**

However, you may make payments to any representative who is an employee or a former employee, as compensation for, or by reason of his services as an employee.

Neither does this restriction apply to the payment or delivery of any money or other thing of value in satisfaction of a judgment of any court or a decision or award of an arbitrator or impartial chairman or in compromise adjustment, settlement, or release of any claim, complaint, grievance, or dispute in the absence of fraud or duress or to money deducted from the wages of employees in payment of membership dues in a labor organization (provided you have received from each employee, on whose account such deductions are made, a written assignment which shall not be irrevocable for a period of more than one year, or beyond the termination date of the applicable collective agreement).

8. **If you are a corporation, you may make no expenditures or contributions in connection with a national election at which presidential and vice-presidential electors, or a senator, or a representative, or a delegate or resident commissioner to Congress are to be voted for, or in connection with any primary election or political convention or caucus held to select candidates for any of the foregoing offices.**

Any corporation or labor organization which makes any contribution or expenditure in violation of this section shall be fined not more than $5,000; and every officer or director of any corporation, or officer of any labor organization who consents to any contribution or expenditure by the corporation or labor organization shall be fined not more than $1,000 or imprisoned for not more than one year, or both.

III. What your employees may do under the new law

THEY HAVE THE RIGHT TO:

1. **self-organization.**

Employees have no right to commit or participate in unfair labor practices, unlawful concerted activities, or violations of collective bargaining contracts. They do have the right to refrain from self-organization, etc., if they choose to do so.

The courts have firmly established the rule that under the existing provisions of section 7 of the National Labor Relations Act, employees are not given any right to engage in unlawful or other improper conduct. In its most recent decisions, the board has been consistently applying the principles established by the courts.

2. **form, join, or assist labor organizations.**
3. **bargain collectively through representatives of their own choosing.**

The bill provides that no party to any collective-bargaining contract should terminate or modify the contract unless the party desiring such termination or modification (a) served a written 60-day notice of the proposed termination or modification on the other party; (b) offered to meet and confer with the other party with respect thereto; (c) notified the Federal Mediation and Conciliation Service (a new independent agency later discussed) within 30 days after such notice of the existence of the dispute, if agreement had not been reached by that time; and (d) continued in full force and effect, without strike or lockout, all the terms and conditions of the existing contract for a period of 60 days after the notice of desired termination or modification was given or until the expiration date of the contract, whichever occurred later.

The bill also provides that the duty to bargain is not to be construed as requiring either party to discuss or agree to any modification of the terms and conditions contained in a contract for a fixed period, if such modification is to become effective before such terms and conditions can be reopened under the provisions of the contract. In addition, the bill does not require compulsory settlement of grievance disputes and other disputes over the interpretation or application of the contract.

4. **engage in other concerted activities for the purpose of collective bargaining or other mutual aid or protection.**
5. **refrain from any or all of such foregoing activities, except where there is a union-shop provision contained in the contract.**
6. **present grievances as long as the adjustment requested by the individual is not inconsistent with the collective labor agreement and the bargaining representatives are given an opportunity to be present at such adjustment.**
7. **secret ballot.**

Secret ballot is to be used (a) to determine the bargaining representative, (b) to authorize a union shop, (c) to accept a settlement rather than strike in a dispute involving a national emergency.

8. **petition the board when they believe that the labor organization which has been certified or is being currently recognized by their employer is no longer representative. The bill guarantees in express terms the right of employees to refrain from collective bargaining or concerted activities if they choose to do so. This additional guarantee, recognizing and protecting as it does the rights of individuals, may result in a substantially larger measure of protection of those rights when bargaining units have been established than has heretofore been the practice.**

IV. What unions may not do under the new law

THEY MAY NOT:

1. **restrain or coerce.**

This applies to (a) employees in the exercise of their rights as guaranteed under the act, (b) employees in the selection of their representatives for the purpose of collective bargaining of the adjustment of grievances.

2. **cause or attempt to cause you to discriminate against an employee with respect to whom membership in such labor organization has been denied or terminated on some ground other than his failure to pay his dues or his initiation fee.**
3. **refuse to bargain collectively with you, provided the union is the representative of your employees.**
4. **participate in or encourage your employees to engage in a strike or a concerted refusal in the course of**

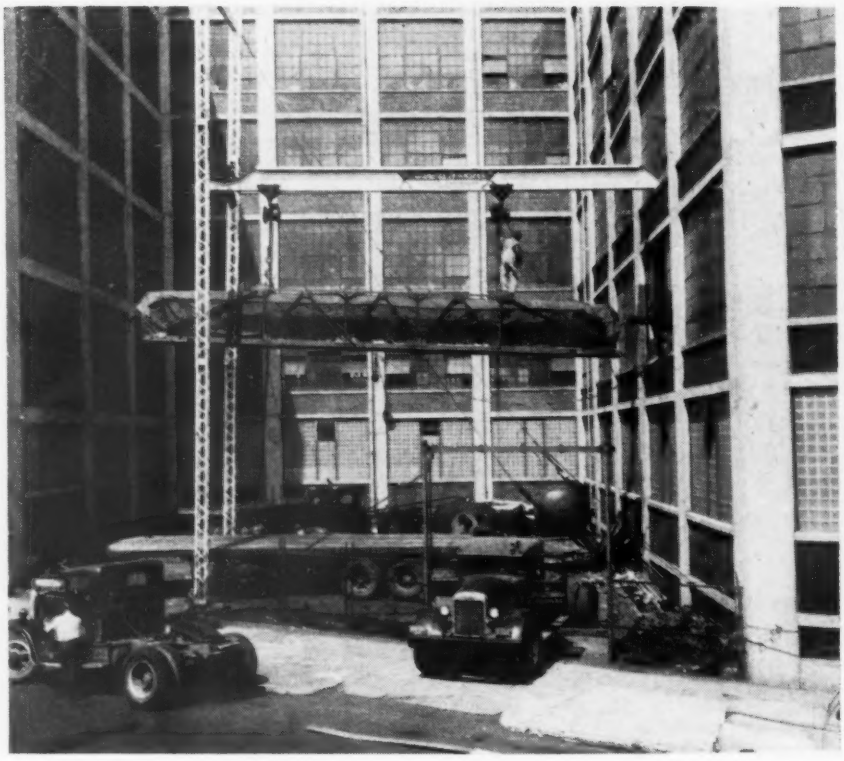
(Continued on page 210)

45-ft. Reading full-fashioned machine *is here being moved on a truss-skid mounted on a Union Mfg. Co. "Monotrailer" which has a Hoobler undercarriage.*

Full-Fashioned Machines Travel by SPECIAL DELIVERY

HIGHLIGHTS: *Waldensian Hosiery Mills receive new full-fashioned machines shipped by Turner truss-skid method—Weeks of machine operation gained by shipping assembled units—Frame used as holding fixture during installation of machines shipped in two sections.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD



Special hoist *is used at Apex Hosiery Mills, Philadelphia, Pa., to move 45-ft. Reading machines. Individual chain hoists have electric motors.*

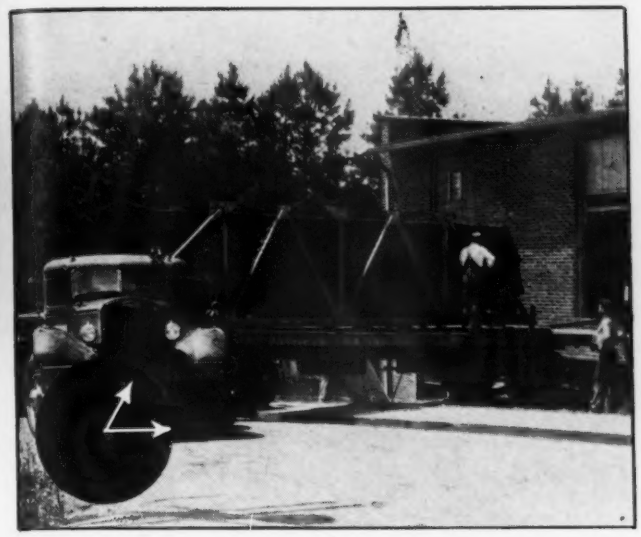
BY RIGGING full-fashioned machines on a patented, 3 ton, truss-skid, Turner Transfer Co., moving engineers of Greensboro, N. C., cut the machine transportation and installation time at Waldensian Hosiery Mills, Valdese, N. C., from approximately 16 weeks down to 3 weeks.

In the past, machine manufacturers like Karl Lieberknecht and Textile Machine Works built full-fashioned machines on the factory floor, then disassembled and crated the parts for shipment to knitting mills where they were re-assembled for operation. Usually 24 to 30 weeks expired from the time the parts were ready for factory assembly to the moment that they were ready for operation in the knitting mill.

Now, Turner Transfer Co. moves a 45 ft., 36,000 lb. Reading machine, such as shown on this page, in a matter of days; and because the machine is already fully assembled except for power transmission, several weeks extra production is gained for the mill.

In the case of the Lieberknecht machine which comes in two sections, the use of the aluminum truss-skids enabled the Waldensian mills to install and connect the two sections, line and level the frames, apply the power, and start the machine in 3 to 4 weeks of actual knitting-mill installation time

Loaded trailers arrive at Waldensian Hosiery Mills . . .

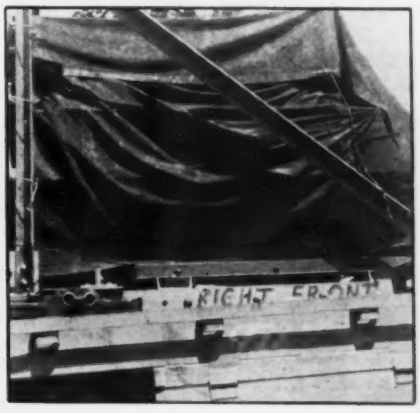


1:15— *The Turner trucks arrive at Waldsensian Hosiery Mills, Valdese, N. C., and the first section of a Lieberknecht machine is backed up to the special opening made in the south wall of the mill.*

1:25— *The tractor pulling the second section of the machine disengages from the trailer in the foreground and maneuvers to a position beyond the first section in the background.*

Where they prepare to discharge their cargoes . . .

Disengaged tractor *is in position to pull the first section of the machine into the mill by using its motorized winch, showing the cable (left) emerging from the winch under the sleeper.*



Aluminum truss *strengthens the long skid on which the full-fashioned machine is mounted. The skid may act as a holding frame since it is jig-drilled for accurate spacing of the machine. Machine is covered with waterproof duck. Note the directions "Right Front," on the skid. Numbers are also printed on the skid to designate location of the machine on the mill floor.*

1:28— *The gate-block is attached to a column in the knitting room and the cable is run from the truss-skid to the winch. By slacking the chain, winchman can open the gate-block, remove cable, and unsnarl tangles.*

With the aid of winches, chains, jacks, etc. . . .

rather than the 12 to 15 weeks formerly required.

Because few knitting mills were built with doors or other entries large enough for the passage of a complete machine or section, special entries often have to be made in the walls of the mills. At Waldensian mills, for example, bricks were removed to make an opening for the machine. But the 9 to 10 weeks extra production gained from the machine was said to more than offset the disadvantage of special openings.

Because more mills are buying new machines than heretofore, in the accompanying photographic report is given a detailed time chart of the full-fashioned machine installation by truss-skid method at Waldensian Hosiery Mills, Valdese, N. C.

Waldensian's new knitting machine begins to move . . .

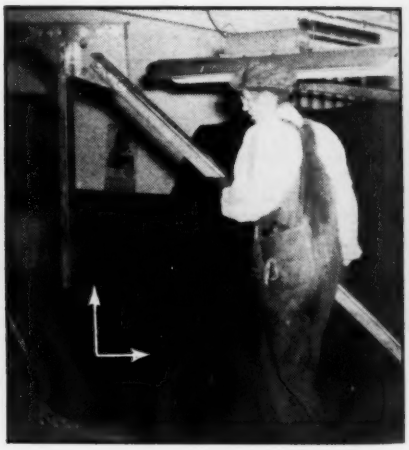
1:30— *Gourley attaches chain to skid, and Fields stands ready to start the winch.*

1:35— *The jacks are set in position around the machine in preparation for raising the skids for insertion of rollers to facilitate movement.*

Across the floor to final position . . .

2:30— *The truckman rides the skid into the mill, pausing to toss away the cigaret.*

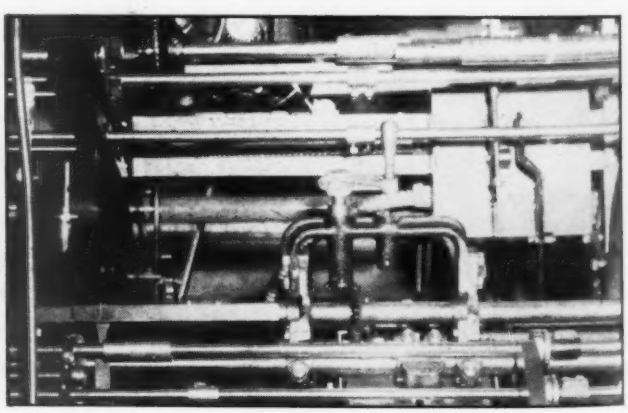
2:40— *The machine is moved into place beside other full-fashioned machines.*



3:00— *The machine is in position; frame sides are removed and stored on trailer.*

Parts are assembled and sections connected . . .

3:15— *Crated parts, for connecting the two sections of the machine and power mechanisms, are moved to the knitting room.*



Two sections *are connected here, and the machine is completely assembled two weeks after arrival.*

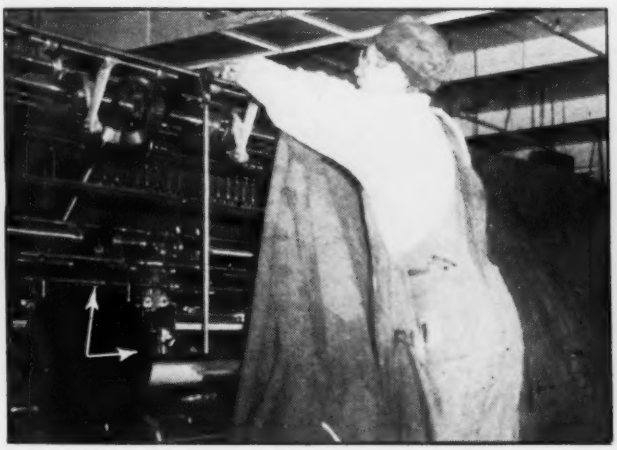
Into the plant through the mill wall . . .

1:50— *The skid has been jacked up, and rollers have been inserted under the skid.*

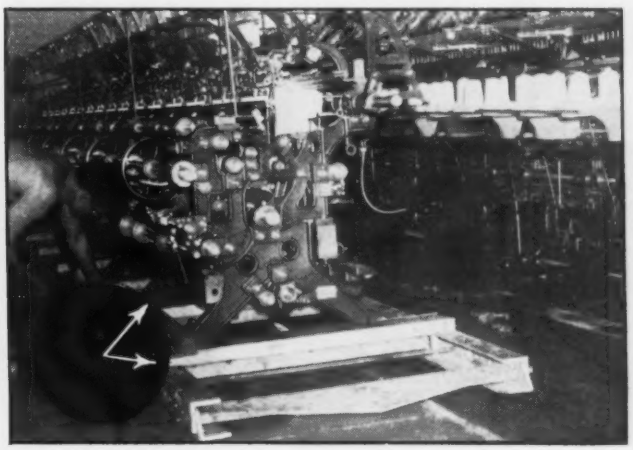
2:00— *The winch has pulled the machine to opening in wall. Note winch cable at left.*

2:20— *The machine is almost clear of the trailer and into the mill.*

Where shipping materials are removed . . .



3:02— *The waterproof tarpaulin is removed from the assembled machine, and movers prepare to bring in the second section.*

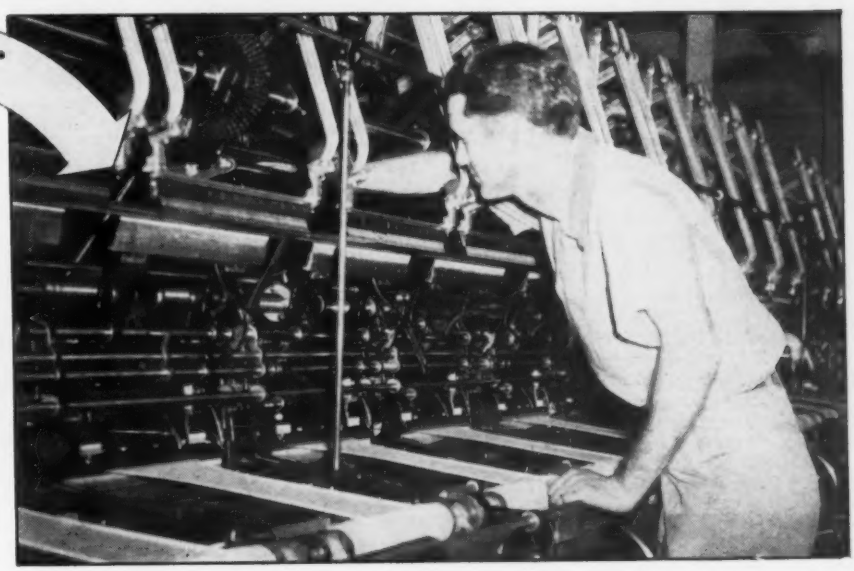


3:07— *Crossbars are placed under the machine, the machine is jacked up until clear, then skids are removed and machine is lowered.*

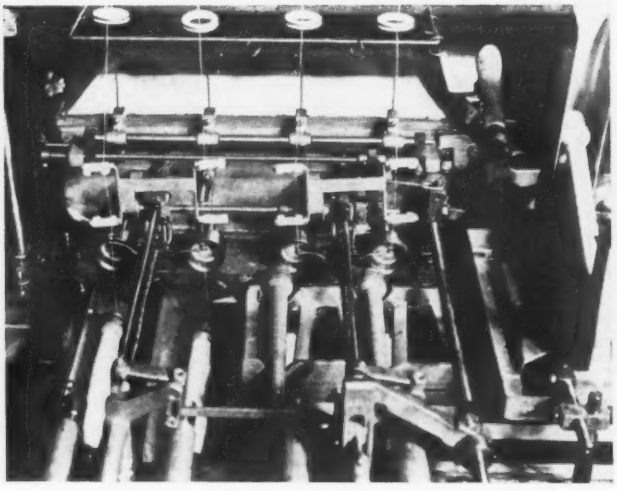
And four weeks later . . .

Machine is in full operation

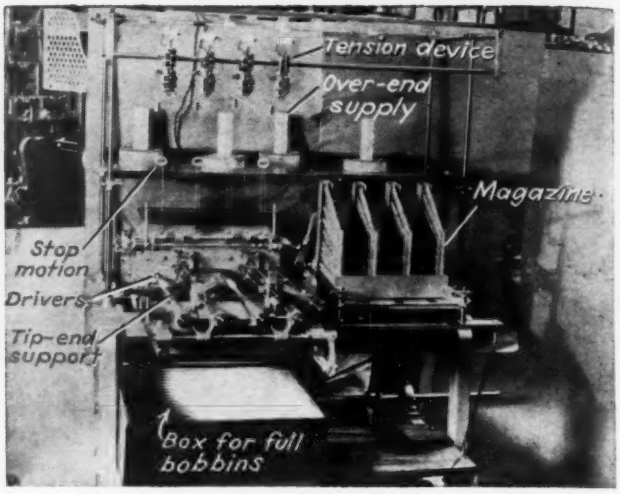
Four weeks after installation by the truss-skid method, the new Lieberknecht machine was in operation. Two frame-men from the factory leveled and lined the machines, and completed the installation, requiring a total time of three to four weeks. However, the 12 to 13 weeks saved by this installation method over conventional moving methods more than compensated for the additional expense involved.



Photos of the Waldensian installation are by C. M. Bowden, Southern Editor, TEXTILE WORLD.



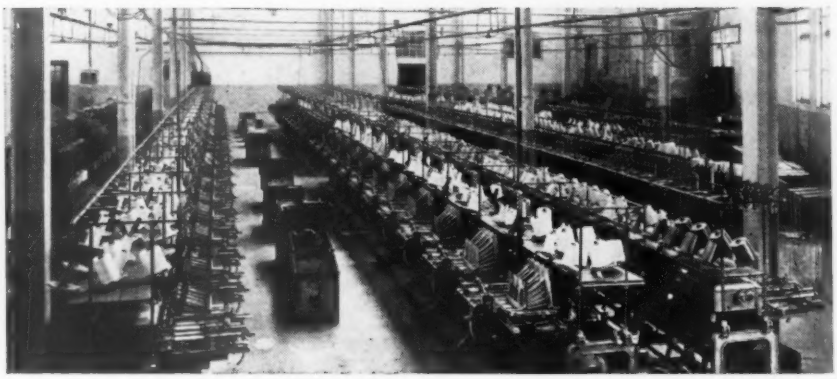
Four spindles shown during automatic doffing.



Four-spindle unit running yarn drawn from small tubes.

AUTOMATIC QUILLER
Achieves High Production

HIGHLIGHTS: *Cotton, wool, and rayon output extensively tested on Hacoba winder—Four spindles run as a unit, two bobbins to a traverse bar —Speed of up to 6,000 rpm. possible with 10 wind—Direction can be quickly reversed.*



Battery of Hacoba winders running filament rayon in the foreground and spun yarn at the right rear.

MODERN FILLING WINDERS which use a full-bobbin stop motion are already automatic insofar as the winding is concerned, but the Hacoba machine, manufactured by Muschamp Taylor, Ltd., Vulcan Works, Pollard St., Manchester, England, and available through Atkinson, Haserick & Co., Boston, is designed to do more than this. The machine winds a full bobbin, stops the winding, lowers it into a tray, inserts a new empty filling-bobbin, cuts the loose thread, and restarts winding. The whole process of doffing and loading is accomplished in five to seven seconds.

The machine is adaptable for the automatic winding of all kinds of yarns, cotton, wool, linen, rayon, etc., and is capable of winding a large range of counts. It will wind any required form of filling package, large or small, and either with or without a bunch. It will even wind flat quills.

In practice, the speed is adjusted to suit the yarn being run. A speed up to 6,000 rpm. has been used on 10 wind.

DESIGN. The Hacoba is built on the unit principle. Each unit is complete in itself for running four packages, which are driven in pairs with one traverse bar for two spindles. All four spindles are fed and run simultaneously.

One single-sided, four-spindled unit is 3 ft. wide and 3 ft. 4 in. long. Thus, 24 spindles can be accommodated in a length of 20 ft. Power consumption is under ½ hp. per four spindles.

The operator's work consists of repair of broken ends, keeping the magazine filled with empty bobbins, and changing the supply packages.

The construction of the machine is

THIS ARTICLE, the fourth of a series started in August, 1944, and covering all types of automatic filling winders available in the United States, comes at a time when this machine is again available for importation. It is quite evident that automatic filling winding is destined to be an important factor in the production of woven cloth. Preceding articles: Whitin-Schweiter, *August, 1944, page 88;* Abbott, *September, 1944, page 139;* Universal, *October, 1944, page 98.*

such that no alteration of gears is necessary to change over from right wind to left wind or vice versa. The change can be accomplished by reversing the direction of the main drive, by crossing the driving belt, or by means of a reversible switch if fitted to the driving motor. If required, two spindles in each head can be used for right-hand wind and the other two for left-hand by simply changing two accessible gears in the main gearbox.

As can be seen from the pictures, the supply package is placed on the upper shelf. The yarn runs vertically upward to the first yarn guide, forward to the tension device, down through the stop motion to the thread guide. The magazine, containing four carriers corresponding to each of the four winding heads, is filled with empty bobbins. The bobbins are driven in the winding position by rubber-tipped drivers and held by spring-loaded tip-end supports. A self-acting changing mechanism comes into operation when the bobbins are full, and the following series of movements occur automatically:

1. The winding is stopped.

2. Four empty bobbins are released and fall from the magazine into a definite position on the carriage directly underneath the magazine.

3. As they stop, the full packages are released from the driving supports by a receding motion of the tip-end support. They then fall into the tray on the lower shelf.

4. The thread guides, still holding the yarn, move back into starting position so that the threads lie in front of the drivers.

5. The carriage, conveying the four empty bobbins, travels to the left until the tubes are directly underneath the drivers, and then raises them into exact alignment.

6. A simple mechanism holds the yarn in position to allow it to be trapped between the driver and the head of the bobbin.

7. The loose ends are cut off by clippers and brought up close under the drivers.

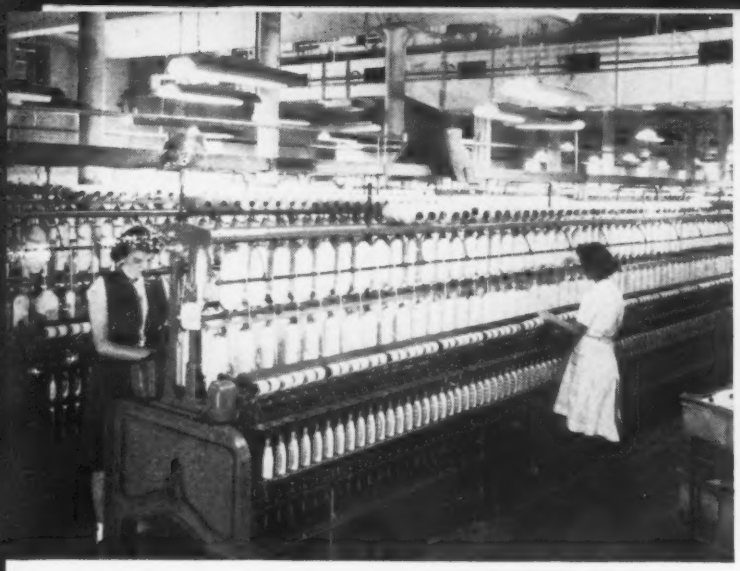
8. The now-empty carriage travels back to its exact position under the magazine.

9. The winding recommences.

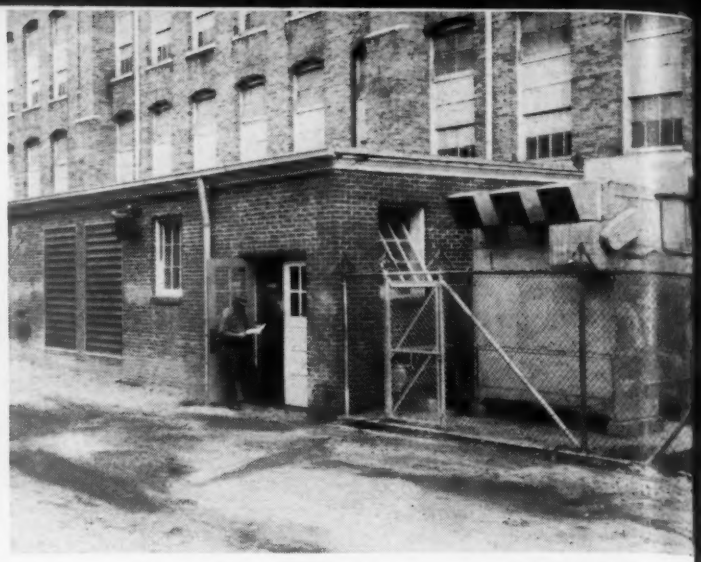
The Hacoba machine will wind from any type of supply, but for its most efficient and economical operation it is desirable for the supply package to unwind over end. The larger the cones and the fewer the breaks, the greater the number of spindles an operator can maintain.

HACOBA PRODUCTION FIGURES

Type of Supply	Count	Weight of Supply (ounces)	Net Weight of Yarn (ounces)	No. of Spindles per Operative	Lb. in 8 hr. per Operative	Length of Bobbin (mm)	Rpm.
COTTON							
Cone	32	32	¾	100	437	177	3,500
Cheese	2/50	16	1	76	475	176	4,600
Cone	3/33	32	1¼	60	798	176	4,600
Cone	14	32	1¾	80	780	178	4,750
Cone	6	80	1¼	48	1,290	180	4,000
Cheese	2/100	10	1½	140	411	134	4,250
Cheese	36	24	2	140	682	179	4,100
Cheese	2/80	14	1¼	168	493	189	3,600
Cone	20	112	1	108	1,228	204	6,000
Cone	2/20	32	¾	44	635	203	6,000
Cone	3/32	32	¾	72	634	203	6,000
Cone	2/30	32	1	60	783	203	6,000
Cone	2/30	32	1	72	769	203	4,760
Cone	2/34	32	¾	84	635	203	6,000
Cone	2/34	32	¾	100	625	203	4,760
Cone	10	32	1	36	743	203	6 000
Cone	2/32	32	1¼	68	862	203	6,000
Cone	20	32	1	72	805	203	6,000
Cone	20	32	1	80	735	203	5,000
Cone	2/28	32	1¼	64	928	203	6,000
Cone	6	32	1½	20	562	220	3,600
Cheese	7	32	1	32	530	200	3,800
Cheese	3/8	96	1¼	20	548	165	1,400
Cone	8	80	1½	44	687	205	3,500
Cheese	4/9	32	1¼	12	690	200	3,600
Cone	17	64	1	88	616	203	3,800
Cheese	3/14	32	2½	48	693	210	3,160
Cheese	2/60	12	2	32	520	171	3,800
RAYON, VISCOSE							
Cone	150 d.	32	¾	80	415	122	3,600
Cake	150 d.	12	¾	60	255	153	4,360
RAYON, VISCOSE CREPE							
Cheese	200 d. (45 t.p.i.)	4	½	28	126	145	4,000
Cheese	150 d. (50 t.p.i.)	6	½	56	185	152	3,100
RAYON, ACETATE							
Spinning Bobbin	140 d.	6	¾	69	212	152	4,200
Spinning Bobbin	175 d.	3	⅜	44	104	168	4,200
RAYON STAPLE							
Cone	32	32	1 1/16	160	750	173	4,250
WORSTED							
Cone	14	32	1	28	624	152	3,650
Cone	16	32	1	58	620	152	3,500
Cone	30	32	1	100	618	152	3,500
Cone	22	32	1	80	705	152	3,500
Cheese	2/50	12	2½	36	450	178	4,700
Cheese	2/42	12	2¼	20	355	205	3,500
Cheese	2/48	12	2¼	40	435	205	3,500
Cone	20	40	1	64	588	181	4,300
Cheese	2/28	24	1¾	28	500	225	3,900
Cone	2/16	20	2¼	24	634	180	3,500
Cheese	2/28	24	2	36	735	215	4,200
Cheese	24	16	1½	28	465	135	4,200
Cheese	12	12	2½	20	425	178	4,620
Cheese	28	16	1¾	36	549	221	4,300
Cheese	2/36	28	2¼	60	768	215	3,680
WOOLEN							
Cone	11	32	2	24	939	176	3,650
Cone	5¾	32	1¾	12	768	200	4,000
Cone	21	32	1½	28	777	200	4,500
Cone	22	32	1½	44	673	205	3,500
Cone	14	32	1¼	20	517	205	3,500
Cone	4½	32	1½	12	742	205	3,500
Cheese	12	32	2	20	910	185	3,500
Cheese	12	32	1½	20	737	200	3,500
Cone	8¾	32	1¼	16	736	195	3,500
Cone	10	32	1½	12	475	209	4,360



1. *Employees work in an effective temperature of 74° F. in Pacolet's basement spinning room, the first cotton-spinning room in the United States to be air-conditioned by refrigeration. Ducts show the manually controlled outlets through which the conditioned air passes to the spinning room. The relief damper (left background) relieves excess pressure which may develop in the room. The Amco atomizers are outside the air-distributing ducts, but are still centrally controlled as an integral part of the conditioning system.*



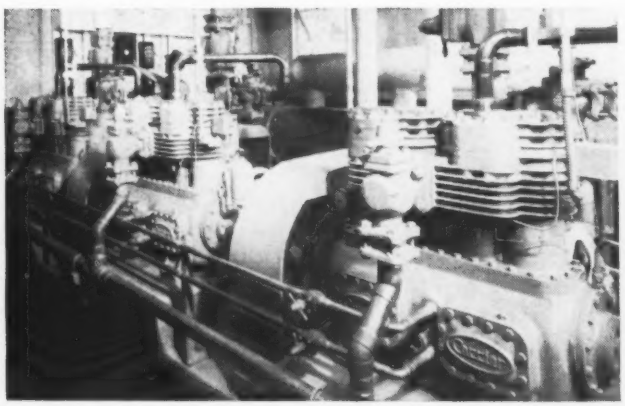
2. *Outside the basement spinning room, the foreman of Carrier's installation crew talks over the operation of the refrigeration equipment with a mill employee. The men are in the doorway of the apparatus building, which houses compressors, fan, washer, and controls. The large damper (left) is operated by a pneumatic motor and automatically allows outside air to enter the washer as desired by the controls. The three evaporative condensers (right) are constructed especially for permanent location outdoors.*

Pacolet REFRIGERATES Spinning Room Air-Conditioning

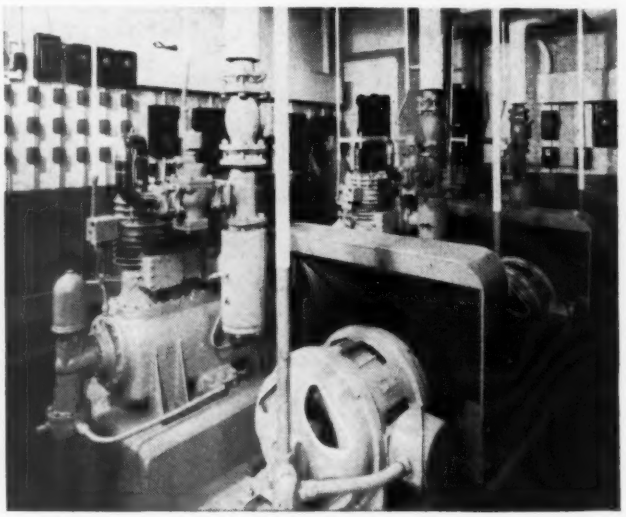
HIGHLIGHTS: *First cotton spinning with refrigerated air-conditioning in the United States maintains year-round standards of 80° F., and 50% r.h.—Production and employee problems overcome—Ends-down range from 20 to 30 per thousand spindle hours.*

By C. MALLARD BOWDEN, *Southern Editor, TEXTILE WORLD*

PACOLET MFG. CO., PACOLET, S. C., is the first cotton mill in the United States to install refrigerated air-conditioning in a spinning room. The installation of Carrier Corp. equipment in the basement spinning department is now in its second summer. The system combines re-

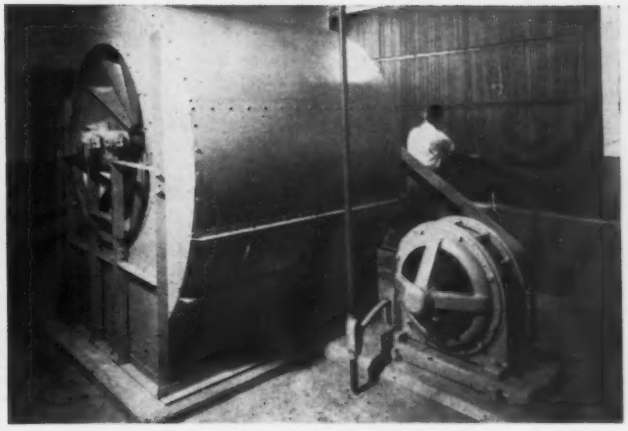


3. *One of the rooms in the apparatus building contains the three compressors shown above. The mill employee is inspecting pressure gage. Compressors are of the reciprocating type directly driven by 50-hp. motor. They compress the Freon refrigerant, a gas which is cooled to liquid state by the evaporative condensers already shown. After condensation, refrigerant goes to liquid receiver which is not shown. There, it is taken off as desired and enters the shell and tube cooler shown in the background. Water is passed through the cooler by means of tubes; the refrigerant expands, absorbs the heat from the water, returns to gaseous form, thus completing the refrigeration cycle.*



4. *Another view of Pacolet's compressors shows the switch-and-control panel. The Allen-Bradley starters in the background start the compressors automatically, or whenever atmospheric conditions require the use of refrigeration. On a year-round basis, the refrigeration is used very little, since the evaporative cooling built into the Pacolet system is sufficient alone except during hot summer months.*

5. *The water cooled by the refrigerant is pumped to the washer shown above where 15 in. of water is held in the base at all times. Pump recirculates water to the shell and tube cooler. Spinning-room air enters through the damper room in the right wall. Like the outside damper, not shown but in the same room, the return-air damper is controlled by pneumatic motors. Dampers are synchronized, so that when one opens the other closes. Washer room also has a water heater for humidifying winter air.*



6. *The giant fan, driven by a 30 hp. motor, pulls the air through the spray eliminator shown in the background, and expels it through the distribution ducts to the spinning room. In the distribution ducts are manually controlled outlets through which the conditioned air emerges into the spinning room. A room thermostat automatically regulates the volume damper and the re-heat coil in the main ducts. If excess pressure develops in the spinning room because of the entering air, a relief damper goes into action.*

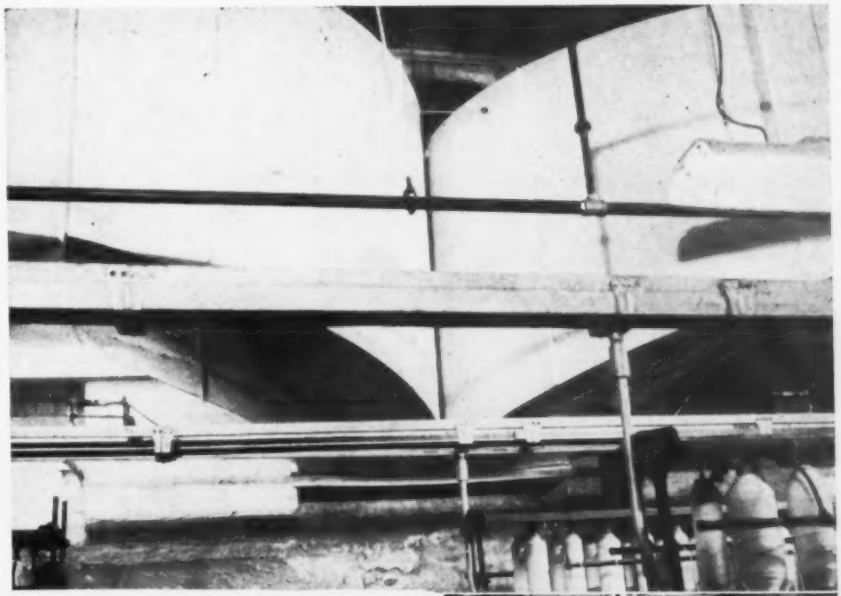
frigeration, winter heating, and humidification; and, as shown by the accompanying photographs, it is completely automatic. Temperature and humidity are controlled to the pre-set standards of 80° F., and 50% r.h., resulting in an effective temperature for Pacolet spinning employees of 74° F., which is well within the human comfort range.

Employee comfort was the basic objective of the Pacolet installation, but production improvements have also become apparent since the installation. Prior to refrigeration, the management believed that the atmospheric conditions in the basement spinning department were far from satisfactory from the standpoints both of employee comfort and of production, two factors which go hand-in-hand in cotton-spinning operation.

The basement spinning room contains 52 Saco-Lowell frames of approximately 11,000 spindles, the production of which is used to supplement that of the larger spinning rooms on the upper floors. Because of the basement location, the heat produced by motors, machines, and people, could not be removed or absorbed by normal means. Especially during the early hours of the second shift, high temperatures occurred when the accumulated heat of continuous operation and the natural heat of the outdoors combined. Production suffered and spinning employees preferred to work in the larger spinning rooms on the upper floors.

REFRIGERATION ENGINEERING. The problem was to reduce the extreme

(Continued on page 141)

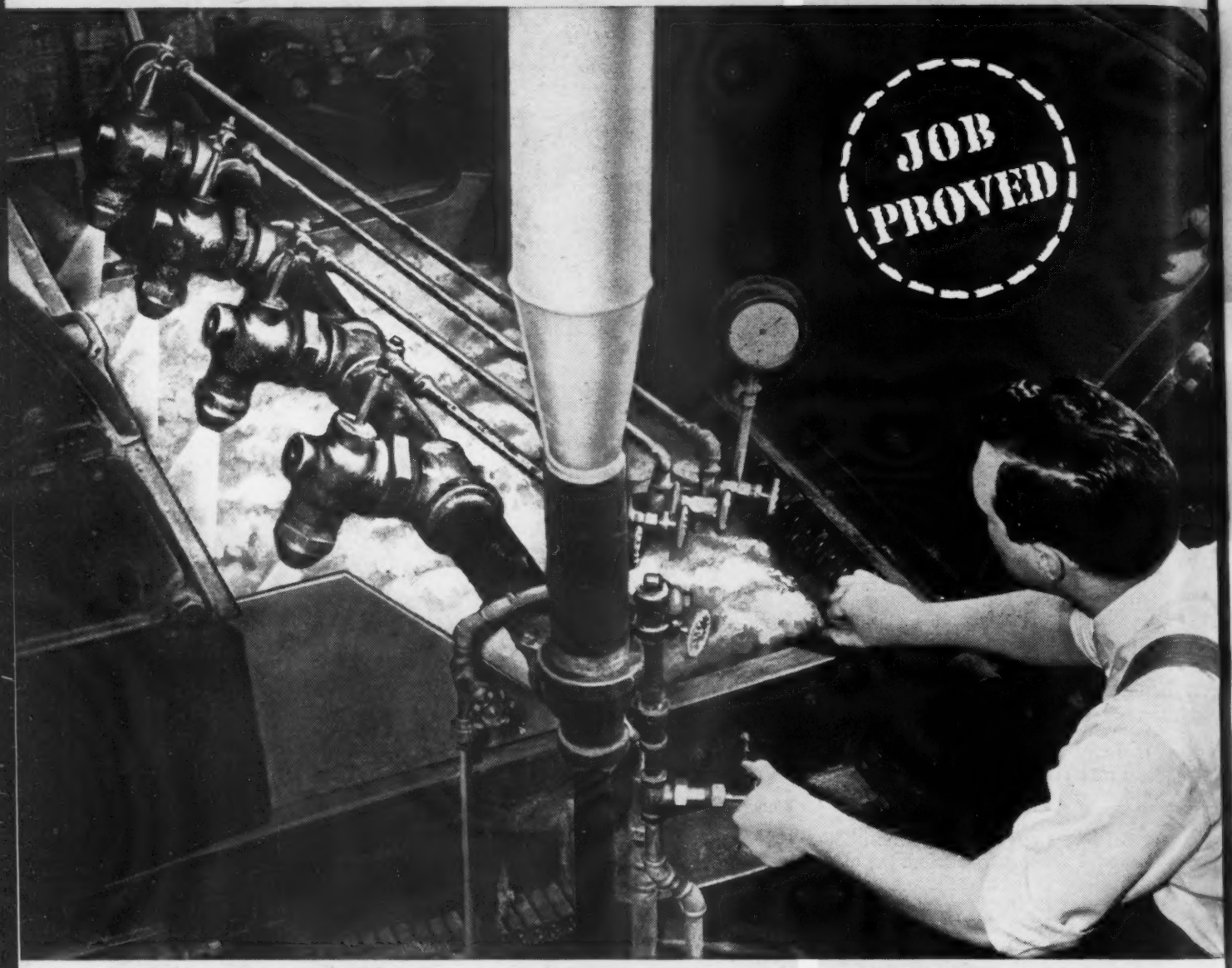


7. *The air-distribution system emerging from the washer room is divided into two zones. Each is controlled by an automatic volume damper and re-heat coil. The latter functions for winter conditioning and also aids in the control of air during the summer.*

8. *A Pacolet employee inspects the air-conditioning controls in the spinning room. Control assembly contains a room thermostat and hygrostat enclosed in an aspirator box. The small, motor-driven fan draws samples of room air over the elements of control; and adjustments in the conditioning apparatus are made automatically. Room thermostat regulates the volume damper and re-heat coil in the ducts. Room hygrostat controls a three-way valve in the air-supply lines to the supplementary moisture heads (atomizers).*

Photos by Coze, courtesy Carrier Corp.

Increased Yield, Better Yarn, Lower Cost



SUN TEXTILE PROCESSING AID . . .

Recommended by Eastern worsted manufacturer, who says, "I have never used a better product."

An Eastern worsted manufacturer was paying a premium price for a well-known type of processing oil, but found the wool hard to process and the yield disappointing.

He brought this problem to a Sun Engineer, who recommended Sunotex, a Sun wool-processing oil which is used in dozens of woolen mills. This "Job Proved" product was put to work and scoured out evenly and quickly. Its use resulted in much cleaner wool and better-conditioned yarn.

A saving of $2,000 a year was also realized, because of the difference in price between the Sun product and the oil formerly used.

"I have never used a better product for processing worsted stock," says the owner of the mill, after four years' experience with Sunotex.

More and more textile engineers are using Sun "Job Proved" processing aids and lubricants and getting results like those described above. If you are interested in the "Job Proved" Sun products that will help you produce more for less, write Department T7.

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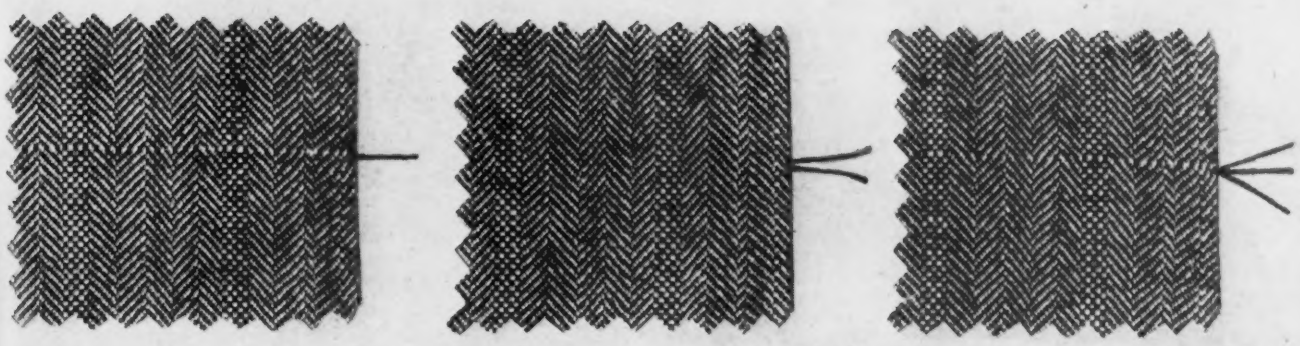


A. *One end means that cutter missed filling and loose end was carried back into the fabric.*

B. *Two ends indicate proper operation of cutter and no imperfection.*

C. *Three ends mean that cutter picked up filling, but did not cut it, and the shuttle dragged the loose end into the fabric.*

Ends showing at selvage on magazine side of loom are clue to double-pick cause.

Eliminating PICK TROUBLES *Reduces Mill's Mending Costs*

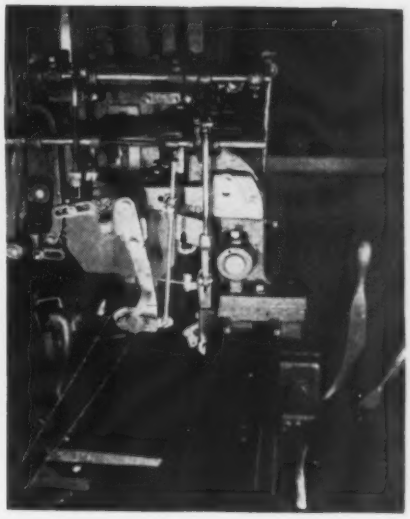
HIGHLIGHTS: *Number of ends left showing on selvage after transfer is clue to double-pick cause — Filling-cutter failures can be checked —Shuttle wear is another fruitful cause of double picks.*

By EUGENE P. SCHREMP
Consulting Editor, TEXTILE WORLD

MENDING OR SEWING COST is something which is accepted in the manufacturing of woolen or worsted fabrics. The cost per yard will vary depending on the fabric woven and what imperfections are allowed to go through. A figure of 2¢ per yd. could cover the cost of mending a coarse, cheap woolen fabric, whereas 6 to 8¢ per yd. would not be excessive for a high-grade fancy worsted. Imperfections which may bring the mending cost to an excessive figure are wrong draws, wrong colors, double end and end out, skipped yarn, slack yarn, broken decorative striping, harness skips, temple cutting, mispicks, broken picks, kinks, slubs, and double picks.

Weaving personnel is always on the lookout to keep these imperfections to the minimum, but there are times when the running of certain fabrics cause an increase in mending costs. Most of these imperfections can be seen at the loom and remedied there, whereas some do not show up clearly and may run for some time unnoticed.

***Careful adjustment** of automatic bobbin changing magazine on Crompton & Knowles 4-box looms will reduce the mill's fabric-mending cost.*



***Filling cutter** has been properly adjusted to hold yarn on one side and cut on the other. Two ends will result as shown in fabric picture B; and there is, of course, no defect.*

WHAT WEAVER SHOULD WATCH. Double picks in some fabrics are easily unnoticed imperfections if weavers do not take certain precautions. There are various causes of double picks. Failure of the filling cutter at the magazine side of the fabric to cut and hold the filling of the depleted bobbin at a transfer is a frequent cause. Weavers should be instructed to watch the ends which are cut by the temple cutter for a few picks after a transfer. If there are two ends extending from the listing, the filling cutter is working properly; and there should be no likelihood of a double pick. One end showing means that the cutter did not pick up the filling at the time of transfer and the yarn was carried into the fabric, thus causing a double pick. Three ends showing means that the cutter picked up the filling but did not cut it and so allowed the shuttle to drag the loose end into the fabric. When double picks occur on the magazine side of the fabric the filling cutter should be suspected of being out of adjustment.

Filling cutter must be adjusted so

(*Continued on page 190*)

from May, 1947
Textile World

DIP IN TEXTILES Is Under Way —But It Will Be Mild

HIGHLIGHTS: Predicted readjustment has started—But even at worst, output will still be high—Rayons at capacity; cottons and wools halfway between prewar and postwar peaks—Prices are on the way down, in most cases more sharply than output—Markets are shifting, holding both promise and threats for mill men—Much depends on over-all business trend, in which a mild dip is also expected—Per capita consumption suggests yardstick for gaging textile trends.

By SANFORD

...by protecting credits now you safeguard profits later

Total current assets over the past year for most manufacturers have been increasing—reflecting increases in inventories, accounts receivable, notes receivable, reserves for bad debts—but at the same time cash in hand and in banks has been decreasing. That's the trend today in manufacturers' reports while business failures continue to rise.

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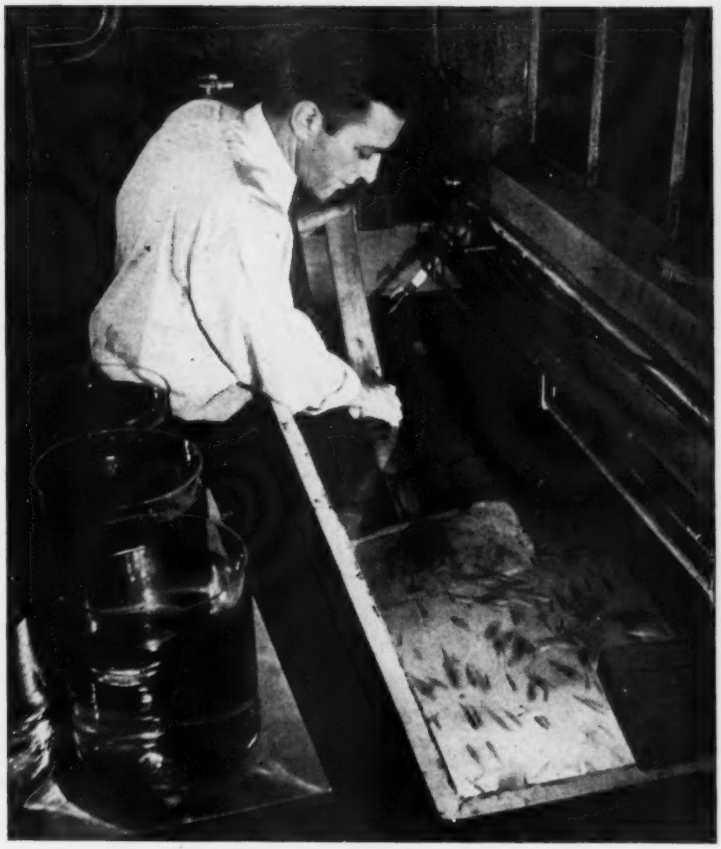


***Dr. Eugene W. Roelofs,** biologist of the Institute of Textile Technology, prepares toxicity tests as one phase of research concerning textile-mill wastes. Here he transfers specimens of fish to aquaria at the left to study the reaction of the fish to mill waste water containing sulphur dyes. Above, he is shown timing the effect on the respirational rate of the fish.*

STREAM-SANITATION Research Is Four-Fold

***HIGHLIGHTS:** Present and pending laws on pollution stimulate need for safe disposal of textile-mill wastes—Caustic and dye wastes are principal offenders—Color is no indication of toxicity but must be controlled also—Institute of Textile Technology working on problem.*

AMERICA'S TEXTILE INDUSTRY, long aware of its responsibility to cooperate with other major industries in striving for stream sanitation, is pressing a scientific attack on this problem through a research project at the Institute of Textile Technology at Charlottesville, Va.

The timeliness of this undertaking is emphasized by current legislation enacted in several states, proposed laws before other state legislatures, as well as agitation for federal legislation, all pointing to the day when actual progress in cleaning up streams will be forced on all offenders. To cite the trend in one region alone: Rhode Island's legislature has adopted five anti-pollution bills in the past few months, while Vermont's lawmakers passed enabling legislation to permit municipalities to impose sewer-service charges for establishment of sewage-treatment plants. Similar legislation is moving along in Massachusetts, New Hampshire, and Connecticut with proposals now current for a New England Interstate Water Pollution Control Compact.

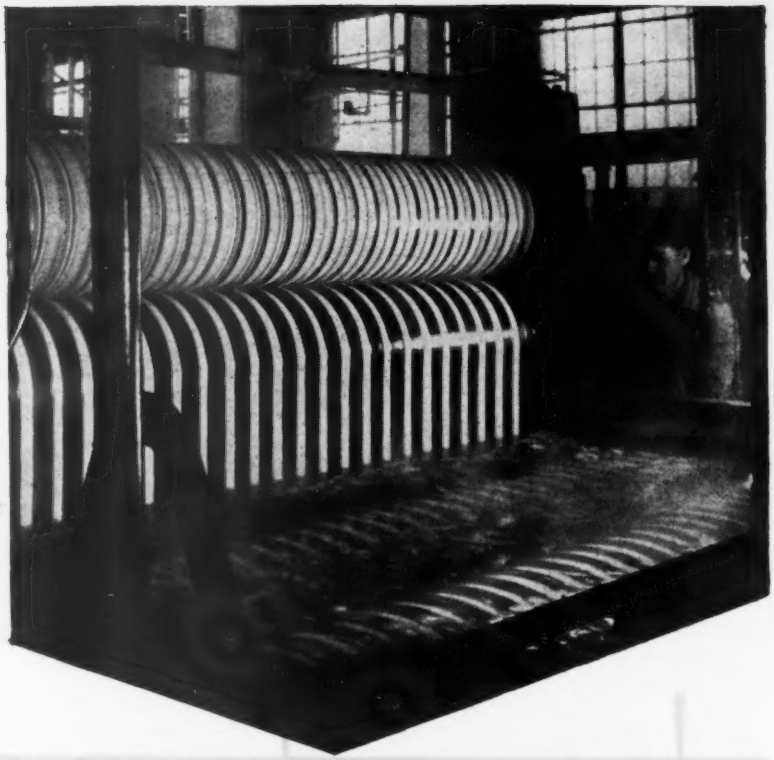
While there are details of differences between the several state laws, in both the northern and southern textile regions, the spirit of them all is similar. Dr. Burt Johnson, head of the biology division of the Institute of Textile Technology and in charge of stream-sanitation research there, notes these similarities in anti-pollution laws:

1. Municipalities must take active steps to treat their domestic sewage.
2. There is a tendency toward strictness and more inclusiveness in the statement of the laws (that is, fewer industries are exempt from the provisions of the new laws than formerly).
3. In those cases where recognized economical methods of treating industrial wastes satisfactorily are not known, the laws often permit scientific efforts to seek ways for treating wastes to pass as compliance with the law for the time being. In other words, the enforcement officers realize that the passage of a law in itself cannot eliminate pollution; they understand that what actually eliminates pollution is the application of scientifically sound principles of waste treatment to the various types of industrial pollution.

"It is to this very problem of methods of economically and surely treating textile wastes that the Institute of Textile Technology has addressed

(*Continued on page 194*)

Dyeing Assistants



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- Sodium Bisulfite, Anhydrous
- Sodium Hyposulfite
- Sodium Metasilicate
- Sodium Silicate
- Disodium Phosphate, Anhydrous
- Tetrasodium Pyrophosphate
- Trisodium Phosphate
- Sodium Sulfide
- Oxalic Acid
- Chrome Alum
- Ferric Sulfate *(Iron Copperas Nitrate)*
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BETTER WEAVING
Is Aim of Alabama Men

HIGHLIGHTS: *Control of moisture in warps is only one objective of weave-room humidity—A prime purpose of sizing warps is uniformity of elongation — Condition of weave-room floor becomes critical when looms are held down by felt pads.*

WEAVE-ROOM HUMIDITY, in the majority of cases, should remain unchanged after moisture controls on slashers are installed—this was agreed at the spring meeting of the Alabama Textile Operating Executives, in Auburn, Ala. [For answers given to six questions on slashing, see "Alabama Mill Men Explore Slashing Practices," elsewhere in this issue.]

The use of moisture controls on its slashers during the last 6 yr., one mill reported, has resulted in an increase of production on its slashers and more uniform moisture content of warps. However, weave-room humidity has not been lowered because humidity affects factors of weaving other than the amount of moisture in the warp. For some styles of cloth, weave-room relative humidity is maintained at 80% in this mill; for other styles, a relative humidity of 85% is maintained.

Another mill reported that it leaves 7 to 8% moisture in its warps. Before moisture controls were installed on slashers, a weave-room humidity of 84% was maintained; and since the controls were installed, humidity has been lowered to 76 to 78% without noticeably affecting the weaving. Storage of warps in the comparatively dry slasher room must be short, it was pointed out.

One mill that leaves 7½% moisture in its warps and operates the weave room with relative humidity of 85% stated that it experimented with lowering humidity. Although slasher moisture controls yielded warps of more uniform moisture content, weaving conditions were not satisfactory at a lower humidity. Humidity was raised again to 85%.

Filling and Quill Breakage

Mill No.	Filling No.	Looms	Picks per min.	Filling and quill breaks
1	14s, 16s	Towel	146	Fewer
2	3s, 5s	X-Model	168	5% more
3	2s to 18s	---	---	Fewer
4	17s to 19s	---	---	0.1% more filling; 46.15% more quills

Of four mills that reported the results in filling and quill breakage after increasing the size of filling quills from 8 in. to 8 3/4 in., two stated that breakage decreased and two said it increased.

Comparison of Braced and Unbraced Looms

40-in. E-Model Looms	Braced	Unbraced
Number of looms tested	10	10
Number of weeks tested	11	11
Speed of looms (p.p.m.)	178	150
Speed increase (%)	18.67	---
Operating efficiency (%)	91.23	95.21
Actual production rate (p.p.m.)	162	143
Actual production increase (%)	13.29	---
Repair cost per loom per week ($)	1.116	0.272

An increase of 13.29% in actual production on 40-in E-Model looms, at an increase in repair cost of $0.844 per loom per week, has been realized at Columbus Mfg. Co., Columbus, Ga., through the use of loom bracers. (For similar comparative data on 40-in. X-Model and 60-in. E-Model looms, see TEXTILE WORLD, Feb., 1947, page 151.)

NEW HUMIDIFYING SYSTEM. A new humidifying system has been installed at Russell Mfg. Co., Alexander City, Ala., it was reported. With moisture controls on its slashers, the mill experimented with lowering weave-room humidity to 80%; but weaving conditions were not satisfactory, and humidity was brought back to 84%.

Mount Vernon-Woodberry Mills, Inc., Tallassee, Ala., and Opelika Textile Mills, Inc., Opelika, Ala., both reported that they maintain the same weave-room humidity since moisture controls were installed as they did before. The former mill operates with a weaving humidity of 85%, and the latter maintains a humidity of 90 to 92% at 82° F. temperatures.

A point brought out by Robert Horsley, Pepperell Mfg. Co., Opelika, Ala., was that generally root starches need less weaving humidity than grain starches.

Changing from 8-in. to 8¾-in. filling quills had various effects on filling and quill breakage. It was stated that most filling and quill breaks occur during the filling transfer; and since there would be fewer transfers made with the larger package, fewer breaks should occur. However, mills that have run breakage tests indicate that the larger package does not always reduce breaks.

One mill man pointed out that the build of yarn on the quill and the tension under which yarn unwinds in the shuttle are important factors in filling breaks.

It was generally agreed that the

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The motion pictures you see are processed with the aid of Beckman pH Control. The developing laboratories of the major motion picture studios discovered that Beckman pH Equipment gives better control of the quality and uniformity of the film developing processes, insures clearer prints, less waste and better projection qualities.

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The food you eat is another item that, today, is made better and more uniform with the aid of Beckman pH Control. It has been found that virtually all types of food processes—from baking crackers to canning meats—are performed more efficiently, more economically with the aid of Beckman pH Equipment.

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count of the filling considerably influences the number of filling breaks and the advisability of changing from an 8-in. to an 8¾-in. quill. One mill that changed successfully to the larger package on filling numbers up to 19s experienced weaving difficulty when it changed 43s filling to the 8¾-in. quill. It was estimated that filling as fine as 60s probably would not run on the larger package.

LOOM BRACES. Different opinions were held as to the best method of using loom braces. One mill that has the braces on 182 40-in. X-Model looms stated that it is not advisable to speed up looms equipped with the braces, although the braces make the looms more rigid.

Another mill reported that it equipped ten looms, weaving 5s filling, with the braces. These looms were speeded up about 10%. Breakage of loom parts, shuttles, and quills increased so much that the looms were reduced to the original speed.

Several mills held the opinion that if looms equipped with the braces are not speeded up, there will be a reduction in loom-maintenance costs and an increase of smoothness of running.

One mill, however, was of the opinion that the increase in production made possible by the use of the braces more than offset increased expenses and loss of efficiency.

In a discussion of the causes of warp breaks, Mr. Horsley recalled a study made some time ago of the effect of tension on yarn during the weaving process. The result of the findings was that the proper regulation of weaving tension is the most important factor in holding warp breaks to a minimum. On the basis that 75 measurable units of tension give the best weaving conditions, a significant increase or decrease (as 35 units) would seriously impair the weaving qualities of a warp.

ELONGATION. The crux of the tension question, it was pointed out by another representative, is regularity of elongation. Tension causes an increase in the abrasion of yarn, and reduction of tension results in a proportionate reduction of abrasion to the point of elimination. Thus, uniform abrasion is obtained through uniform elongation. The purpose of sizing, therefore, is not to increase the strength of yarn but to make elongation uniform, it was claimed.

Securing looms to the floor by means of felt pads has reduced vibration and loom-supply and maintenance costs at Mount Vernon-Woodberry Mills, according to reports made.

Some Causes of Bobbin Breakage

1. Excessive loom speed.
2. Improper setting of transfer mechanism.
3. Bad piecing-up on filling.
4. Shuttle feelers set too far from point of shuttle.
5. Quill in battery not in line with shuttle.
6. Transfer fork not in center of shuttle.
7. Hole in back of lay.
8. Hole in picker-stick guide.

Loom Settings to Reduce Warp Breaks

1. Set harness cam level with reed 3 in. from fell of cloth (shuttle in battery end).
2. Set vibration cam at highest point (with lay pulled forward so that reed is 1 in. from fell of cloth).
3. Set harness 7 in. from fell of cloth.
4. Set stop motion 7 in. from harness.
5. Set stop motion 11 in. from whip roll.
6. Set height of stop-motion stand 7 in. from loom side at the front and 8 in. at the back.
7. Set height of whip roll 13-1/2 in. from top of whip roll to beam spindle (for 20- or 22-in. head).

It was generally agreed that a good floor and proper installation are essential to satisfactory operation of looms fastened down with pads. If the pads are put down on a solid, clean floor with the glue that the manufacturer recommends, the pads will hold securely.

At Muscogee Mfg. Co., Columbus, Ga., the pads have proved satisfactory on X-Model looms, Louie Burkes, assistant superintendent, reported. On C-5 33-in. looms on a floor with a concrete base, pads are more satisfactory than bolts. On 48 C-3 looms on a floor put down during the war, however, the pads hold but the floor is not sufficiently free of vibration.

Another mill reported that the upswing motion of C-3 looms operating at 184 p.p.m. caused the looms put down with pads to come loose from the floor. The pads were left in place and the bolts that formerly held the looms down were replaced. No more trouble was experienced with looms coming loose.

Cowikee Mills, Eufaula, Ala., has 35 looms, both belt and motor driven, put down with pads. It also has some twisters on pads on a concrete floor. Both applications of the pads are satisfactory.

SHUTTLE FUR. Several kinds of fur are used by mills to control tension on filling in the shuttle. One mill, operating X-Model looms with 4½s to 19s filling, uses lamb fur along with two bristles at the end of the bobbin. Satisfactory results were said to be obtained.

Muskrat fur is used at Columbus Mfg. Co. in preference to bristles on filling numbers finer than 17s. On 17s and coarser numbers, run on 8¾-in. quills on X-Model looms, muskrat fut and bristles are used.

Cat fur breaks the balloon of the yarn coming from the quill at Mount Vernon-Woodberry Mills, it was stated; but the fur wears out rapidly. Filling numbers used range from 2½s to 16s.

Opossum hair and two bristles in the end of the shuttle are used at Shawmut Mills, West Point Mfg. Co. and at Opelika Textile Mills on heavy filling numbers, it was reported. The average life of the Australian opossum hair at Opelika Mills is about one week.

Rabbit fur along with bristles in the front of the shuttle are being used at Muscogee Mfg. Co. on C-5, high-speed looms. Fewer filling breaks are now incurred than before this arrangement was adopted.

Plush is preferred by one mill to the lamb fur that it formerly used on filling numbers ranging from 2.90s to 14.50s. Only one bristle is used on the back of the shuttle at the eye; and on many numbers, this bristle is eliminated. The plush ordinarily lasts the life of the shuttle, whereas the lamb fur wore out rapidly.

The plush used has a ⅛-in. looped pile on one side. When the plush is placed in the shuttle, care should be observed that the angle of the taper on the filling bobbin is such that uniform tension is placed on the yarn during the unwinding of the entire bobbin. The taper of the bobbin may have to be changed if a mill goes from the use of fur or bristles to the use of plush.

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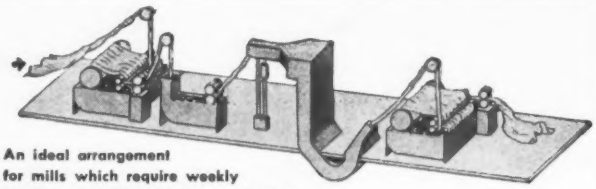
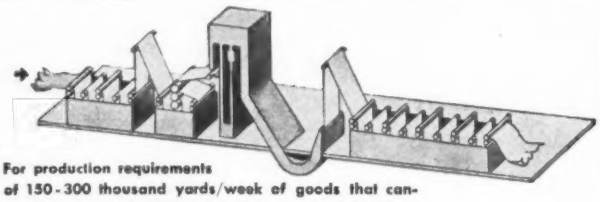


An ideal arrangement for mills which require weekly production of 200-500 thousand yards of goods averaging 3 yards/pound or lighter.

ONE-STAGE OPEN-WIDTH SYSTEM



For production requirements of 150-300 thousand yards/week of goods that cannot be rope-processed—especially successful with a wide range of heavy fabrics.

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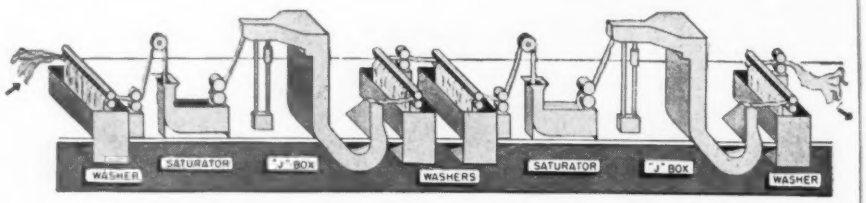
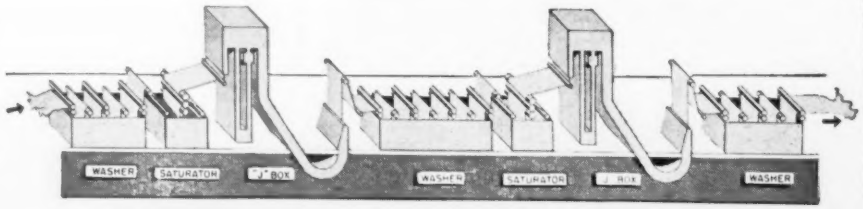


TWO-STAGE OPEN-WIDTH SYSTEM

For cloth that cannot be handled in rope form. Operating speed generally between 75 and 125 yards/minute. Any degree of bleaching obtained by adjusting peroxide strength.



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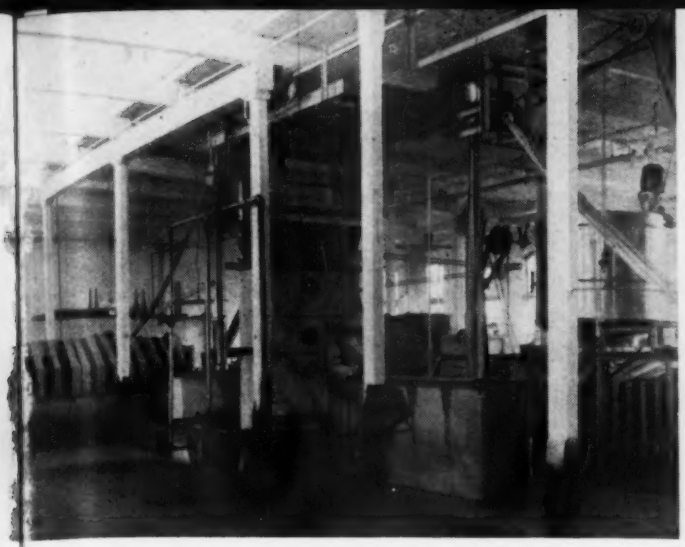


1. *This view of the Highland Park continuous-bleaching range shows the flow of cloth from the peroxide saturator into the J-box, and from there to the slack washer. Note plaiter suspended over the open J-box, also the port-hole sight glasses for observing cloth levels. The cloth piling into the J-box acts as seal for steam entering below.*

2. *A nearer view of J-box shows sections with steam chests visible near the floor line. Cloth leaving saturator before entering J-box is squeezed between two horizontal, air-loaded squeeze rolls shown here. The pressure is regulated to allow the desired amount of pickup of liquor from the saturator.*

Continuous Bleaching Successful On COLORED-YARN GOODS

HIGHLIGHTS: *All production is bleached in single-stage unit—Centralized controls simplify operation—Handling of goods continuously makes for uniformity and speeds up production.*

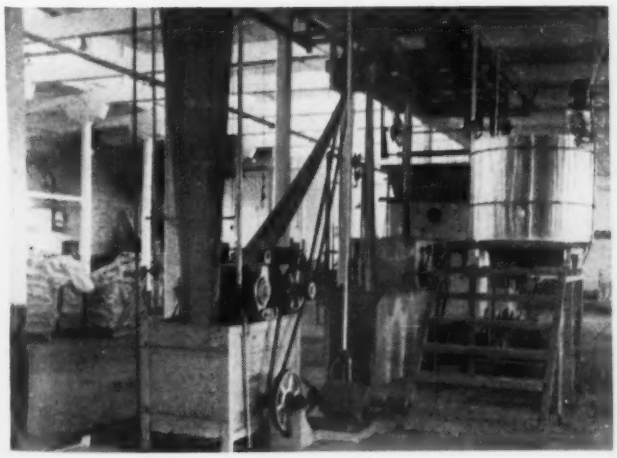
By D. STEWART QUERN
Southern Manager, Becco Sales Corp.

IN LATE OCTOBER of 1946 the Highland Park Mfg. Co., of Charlotte, N. C., first put into operation a continuous peroxide-bleaching range. Operations commenced under the direction of W. F. Lanier, superintendent of the finishing plant. This unit, designed to handle all the plant's finished-goods production, is known as a "single" stage range, comprising, as it does, only one J-box.

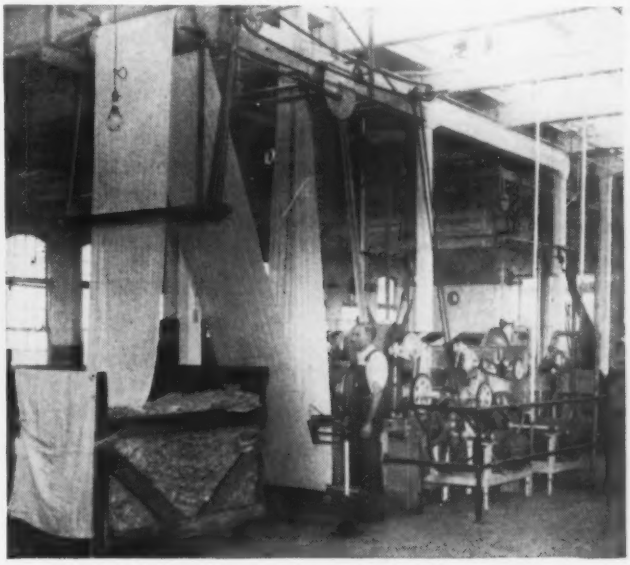
It was designed to bleach continuously colored-yarn dress goods and shirtings of an average weight of 4 yd. to the pound. The dyed yarns woven into these fabrics are colored with fast dyes, namely, vats and naphthols.

In many constructions, much of the fabric may be made up of unbleached yarns. It is necessary to bleach these to a pure white without damaging the

(Continued on page 192)



3. *At the right rear of the range is mounted the elevated stainless-steel mixing tank equipped with propeller-type mixer. Hydrogen peroxide and auxiliary chemicals are mixed in this tank and flow by gravity into the saturator. Wash box at left has heavy nip which provides thorough squeezing of goods before entering saturator. The squeeze here is controlled to provide more pressure on goods entering saturator than on leaving. This permits pickup from the saturator of chemicals fed in from the mixing tank.*



4. *Goods are shown being delivered from the range into boxes after passing through the openers. Control panel board is located on the left (opposite) side of the washer, in front of which operator is standing.*

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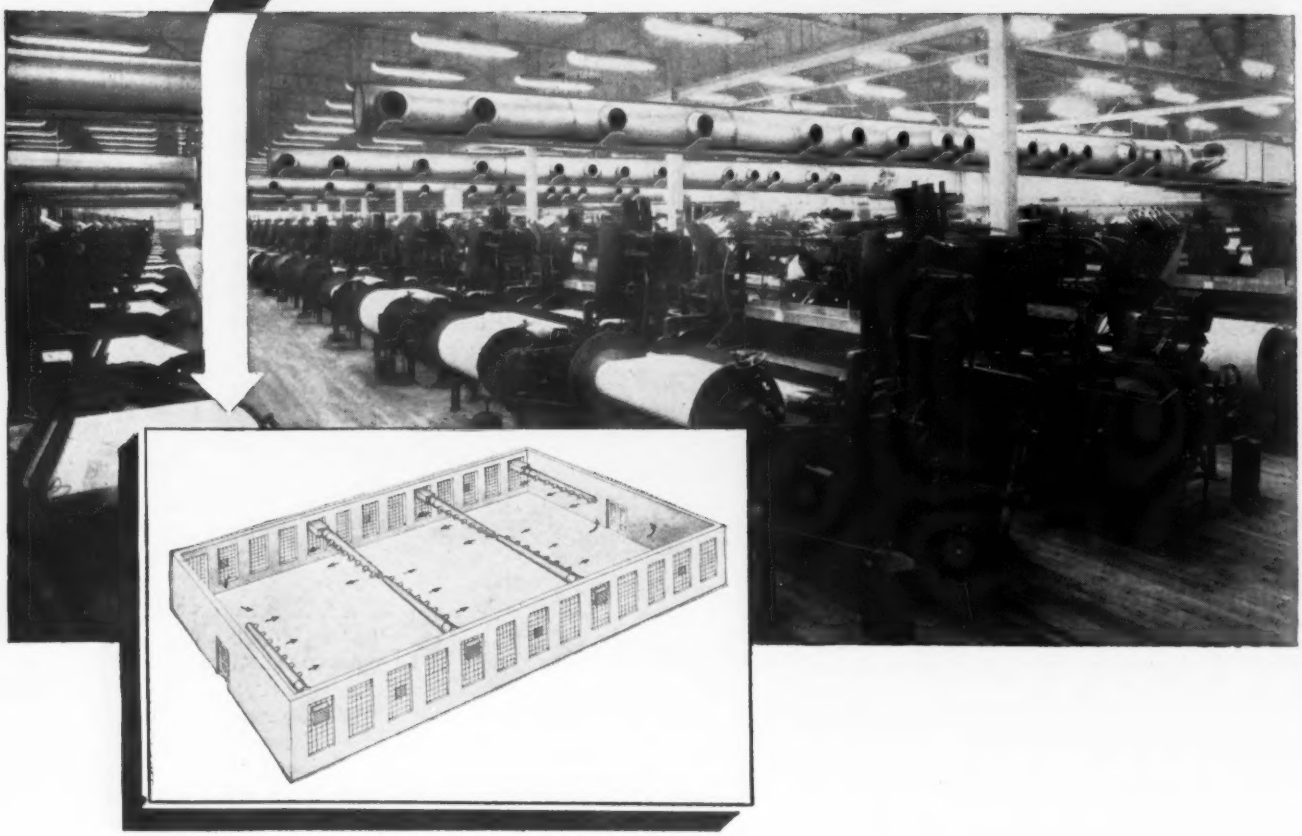

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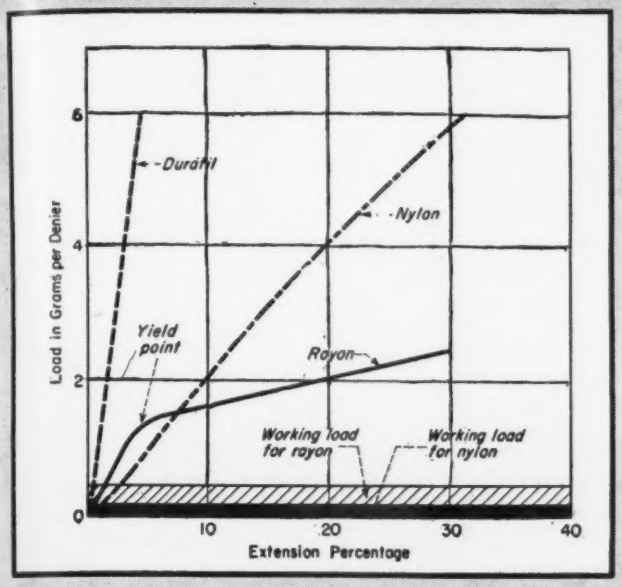

HIGHLIGHTS: *Yarn-feeding tension must be governed by the type of yarn used — Need for yarn lubrication can be determined by yarn-drag test — Yarn-feeding elements require careful adjustment.*

By H. WIGNALL
Leicester, England

Fig. 1. The safe working load (knitting tension) of rayon is approximately 2-1/2 times as great as that of nylon, due to their comparative degrees of elongation under identical loads per denier. As shown here, the author indicates that rayon can safely be knitted under a tension of slightly more than 0.5 g.p.d., while nylon cannot be run under a tension of more than 0.2 g.p.d. Durafil, described as representative of strong synthetic yarns of well-oriented molecules, is said by author to be unsatisfactory for knitting.

Circular Knitting Requires Accurate YARN FEEDING

GOOD CIRCULAR KNITTING starts with the yarn, is influenced by the winding of yarn on the knitting-supply package, and may be maintained or ruined by yarn-feeding elements.

Care must be taken to obtain an even tension on the yarn with the minimum of strain. The degree of elasticity, strength, and resistance varies considerably, of course, according to the type of yarn being knitted; and the object of yarn-tension or yarn-feeding devices is to insure that there is an equal amount of yarn in every loop that is knitted.

Wool and cotton yarns will stand fairly severe tensions and comparatively rough handling, although best results are obtained if tensions are kept at a minimum and frictional mechanical devices are as gentle as possible.

Nylon, although its ultimate strength is approximately three times that of regular rayon, has a greater extensibility under loads of 1 gram per denier (g.p.d) than rayon, Fig. 1. Rayon strongly resists extension up to the yield point, after which it falls away rapidly. For this reason, the safe working load of rayon is much higher than that of nylon. Special types of strong regenerated-cellulose yarns that have well-oriented molecules have practically no extensibility up to the ultimate breaking point (See "Durafil," Fig. 1). These types of yarns are unsuitable for knitting.

YARN PACKAGE. The yarn package and the manner in which it is used on the machine are also important. Most yarns intended for seamless-hosiery machines are carefully wound on some type of cone or bobbin by the throwster so that it is ready for immediate use by the knitter. Frequently, it is necessary to treat the yarn in some way to reduce drag. The drag of yarn can easily be measured on a light-spring-loaded spool around which the yarn is wrapped and wound at a steady speed. A pointer is attached to the spool; and if this pointer is drawn over too far on a graduated scale, the yarn requires some sort of lubricant.

The yarn may be lubricated in several ways, such as:

1. By being passed between two spring-loaded wax disks revolving in opposite directions so that the yarn is evenly treated around its circumference.

2. By being passed over a roll, Fig. 2, the lower part of which is dipped in a 1% vegetable-oil emulsion. The limitation of this method is that the thread must be knitted fairly quickly after preparation because the emulsion

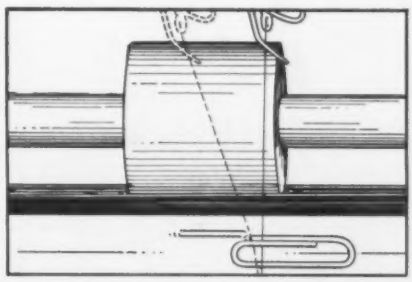

Fig. 2. One method of lubricating knitting yarn is shown. The contact of the yarn to the surface of the lubricating roll is for the purpose of insuring complete and uniform lubrication, not merely the moistening of one side only.

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tends to dry out and leave the yarn in worse condition than it was before treatment.

3. By being treated with special preparations, such as synthetic resins.

Knot tying plays an important part in the problem of controlling yarn tension, regardless of the type of yarn being used. For most yarns, the ordinary weaver's knot is best; but for yarns made of some of the newer synthetic fibers, a double weaver's knot may be necessary to avoid slipping.

If knots are too bulky, they tend to block the yarn guides and either break the yarn or put a sudden, uneven tension on the loops during knitting. On some types of fabrics, a bulky knot can also cause faulty positioning of the yarns in the fabric. A more serious fault is the extension of the yarn, causing a thin place or even complete or partial breakage in the loop.

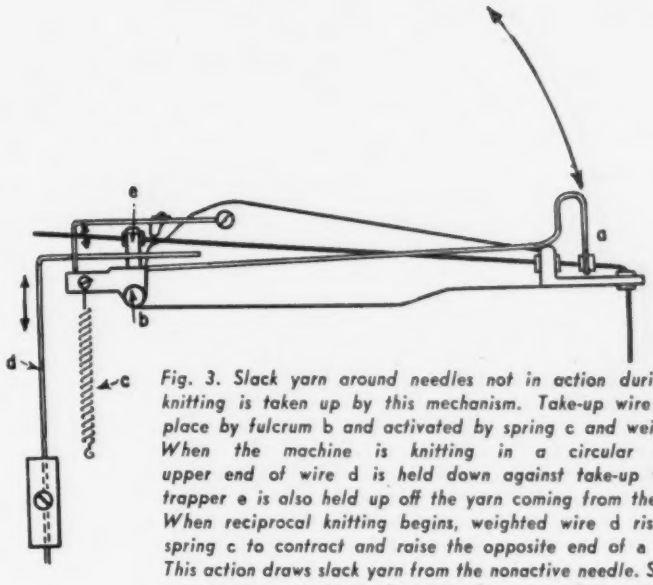

Fig. 3. Slack yarn around needles not in action during reciprocal knitting is taken up by this mechanism. Take-up wire a is held in place by fulcrum b and activated by spring c and weighted wire d. When the machine is knitting in a circular manner, the upper end of wire d is held down against take-up wire a. Yarn trapper e is also held up off the yarn coming from the supply cone. When reciprocal knitting begins, weighted wire d rises, permitting spring c to contract and raise the opposite end of a along path f. This action draws slack yarn from the nonactive needle. Simultaneously, yarn trapper e is lowered against the yarn and stops it feeding from the cone.

TENSION. Knitting tension can be controlled by special devices made for this purpose. These devices fall into three groups: (1) spring-loaded cymbal disks, (2) friction poles, and (3) positive-feeding devices.

The object of all of these devices is to feed the yarn to the needles in such a manner that all the needles will draw the same length of yarn for a loop. The spring-loaded disks and friction poles are sometimes used together, and they tend to even out any irregularities of tension made in winding and produce a firm, even knitted loop. The positive feed-wheel device draws the yarn evenly from the cones and can be adjusted to deliver any given amount of yarn to the needles. A certain tension can also be set up between the feed wheels and needles.

An integral part of the over-all control of yarn tension is the take-up of excess yarn around needles not in action during reciprocal knitting. The device that accomplishes this task, Fig. 3, consists in an arrangement for stopping the feed of yarn to the needles at the appropriate time.

When tension devices are set, the following points should be kept in mind:

1. Tension must not be too severe or the stitch cams will have to be depressed to obtain a good-quality fabric. Too much tension may result in cutting, or a sudden change may displace needle butts so that they hit the point of the stitch cam.

2. The tension on the take-up wire of the slack-yarn take-up device must be just sufficient to take slack out of the yarn and must not be too severe.

3. When two or more ends are being run, care must be taken to segregate the yarns as far as possible prior to their entering the feeders in order to prevent tangling.

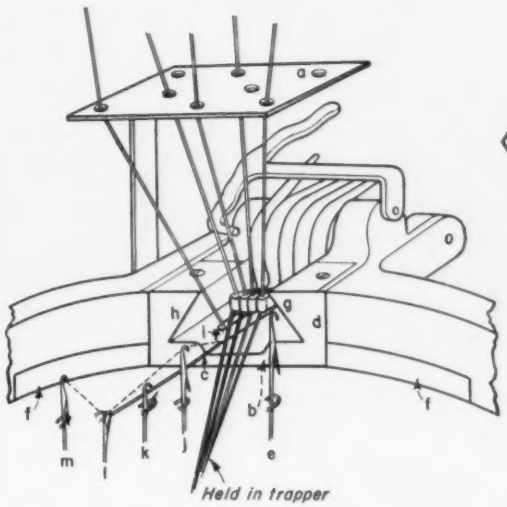

Fig. 4. Critical parts of yarn-feeding elements that must be maintained in a smooth-surface condition and accurately adjusted in order to yield quality knitted fabrics include top yarn-guide bracket a, lead control points b and c, mouthpiece d, mouthpiece edges g and h, and latch ring f. Needle positions indicated are: reciprocal-knitting needle e in clearing position; circular-knitting needle in position j taking yarn from feeder i, old loop raising latch at k, knocking over at l, and the upthrow at m.

FEEDING ELEMENTS. Proper maintenance of yarn-feeding elements is one of the most important factors in good knitting. The holes in the top yarn-guide bracket, *a* in Fig. 4, which keep yarns separated between the tension devices and feeders, must be kept clear. Regular inspections should be made to insure that grooves worn in the bracket by the yarn do not impede the passage of knots and cause press-offs.

The lead of the yarn (the distance between the points at which yarn is presented to the needles and is taken by the needles), controlled by points *b* and c of mouthpiece *d*, is very important. If the lead is too great, plating problems often arise. If the lead is too small, the yarn has a tendency to loop at the back of the needles and cause pinholes. Too small a lead is particularly bothersome if a splicing end is being run in with the main yarn because of the tendency to cause loops on the back of the fabric.

Needle latches will be flicked up when the needles rise to the clearing position, *e* in Fig. 4, unless mouthpiece *d* is flush with latch ring *f* and is perfectly smooth. When a mouthpiece wears, it is advisable to replace it immediately. Mouthpiece edges *g* and *h* must be smooth, or latches will be bent in the heel and toe when the needles are in the non-operating position.

The entire latch ring must be in the proper position so that the part containing the mouthpiece is fairly close to the needles. The ring and the mouthpiece must be well down in order that needle hooks are well above the level of the lower corner c of the mouthpiece.

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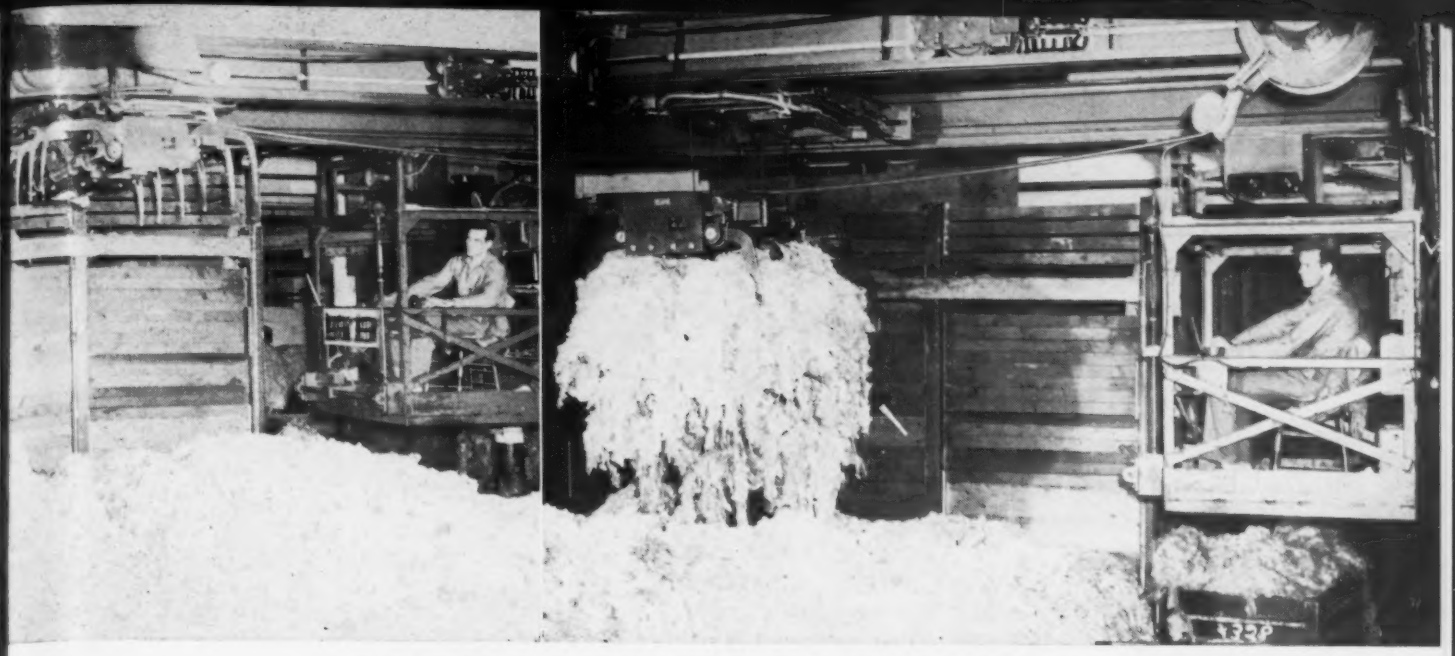

Wool is distributed and spread as it drops from sorting room above.

Grapple Speeds WOOL HANDLING

HIGHLIGHTS: *Up to 20,000 lb. per hr. can be moved by one operator—Apparatus does not interfere with sorted wool being dropped from floor above—Wool is distributed in bin or loaded on trucks.*

By ARTHUR M. STEVENS
Consulting Engineer, Methuen, Mass.

IN ONE OF THE LARGEST worsted mills, wool is sorted on the top floor of a large warehouse and is then dropped through traps in the floor to the room below. This room is divided into bins of various sizes where wool is stored. It may be removed from these bins as fast as it is being put in or it may remain for several days. A problem was to find some mechanical device with which to spread the wool evenly within a bin as it was being dropped through the trap and to load it into trucks as it was needed. All this work is now being done by a system of cranes with special grapples attached to them as shown above, and one operator alone in the cab can easily handle 20,000 lb. of wool per hr.

The cranes are entirely independent; each serves a section of the warehouse and travels the entire length of it. They run on tracks attached to side walls or to posts, as close to the ceiling as possible. The tops of all bins are cut off to allow only the bridges of the crane to pass over. The front vertical edge of each bin next to the aisle is fastened securely to the floor, making the partition self-supporting. The cab is attached to the crane and always remains over the aisle.

NO INTERRUPTIONS. To make it possible for wool sorters on the floor above to work continuously, regardless of the operation of the crane, there is a smooth platform mounted on top of the bridge. This platform forms part of a storage space to hold, temporarily, any wool that would otherwise become tangled in the mechanism of the trolley and grapple. When the crane moves away from the trap, the accumulation on the platform is scraped off by guards attached to the ceiling; and the wool falls into the bin below. It requires less than a minute to run the crane under a trap, pick up a load, move away, and discharge the load.

Very little storage space is lost using these cranes, if the building is adapted to their use, because the hoisting mechanism on the trolley pulls the grapple up into very small space; and when the claws of the grapple are opened, wool is left piled nearly as high as when the work was done by hand. The crane can pass from bin to bin only when the trolley, with grapple attached, has been run out of the bin to the side of the cab and over the aisle. The trolley runs on the lower flanges of the bridge girders; and with its hoisting mechanism, it occupies no more vertical space than the depth of these girders.

ELECTRIC POWER. Power is supplied to the crane by an enclosed electric feed rail running parallel and attached to the main track on which the crane runs. All switches are conveniently located in the cab. Hand controllers regulate the speed of the trolley and bridge motors, a foot switch raises and lowers the grapple, and a push button switch opens and closes its claws.

Previous experience is not necessary to operate these cranes. However, an experienced person operates several of these controllers simultaneously, with the result that wool is leveled off in the bin very quickly and is loaded into trucks about as fast as they can be pushed along the aisle beneath the cab.

In another installation now being considered in a low posted warehouse, one floor will be removed and wool will be stored in deep bins. When it is to be removed, it will be dropped into chutes located in the corner of each bin or every other bin. In this installation, there will be no aisle below the cab, thus leaving more room for wool storage. The chutes will discharge into trucks located on a lower floor.

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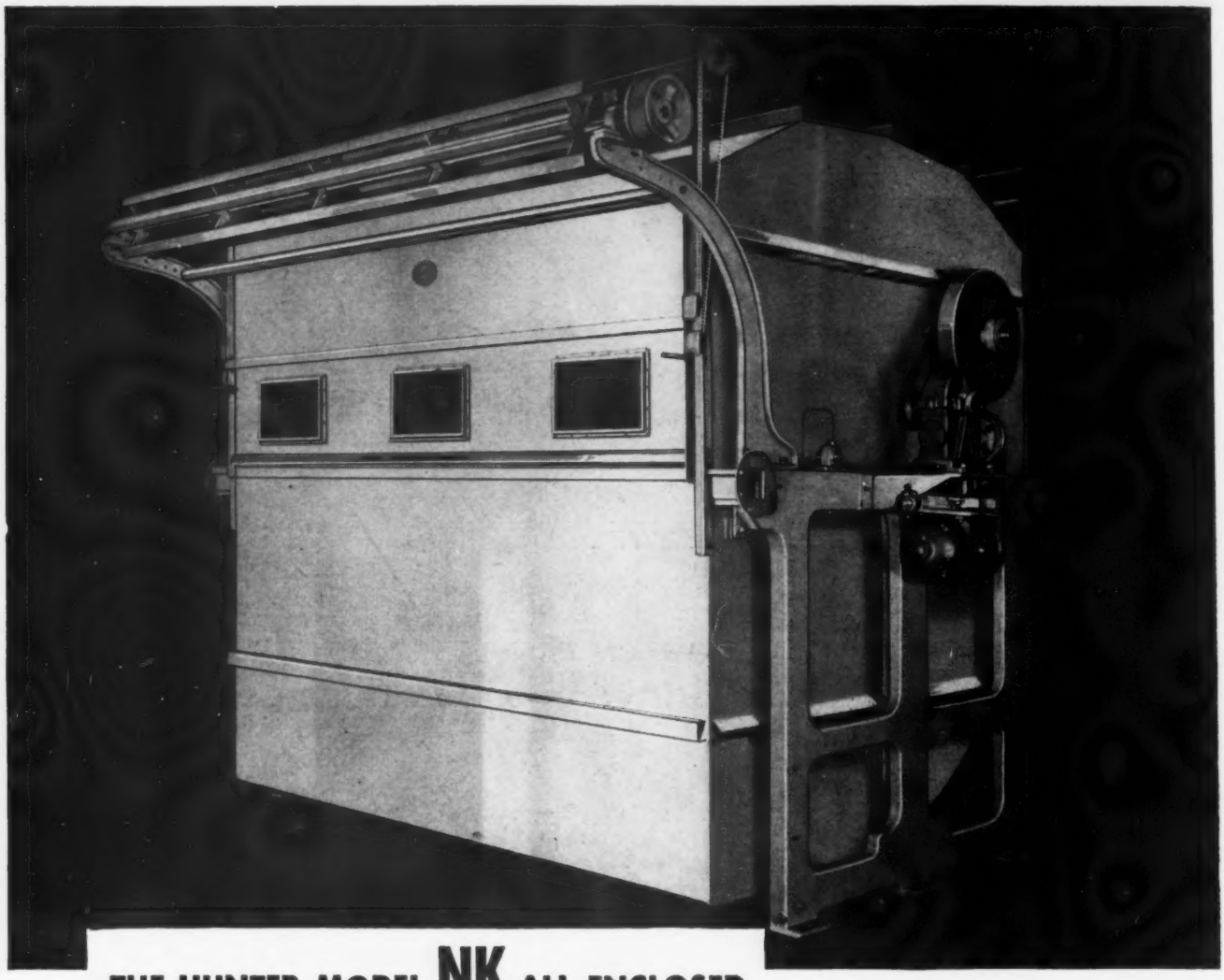
* *The device shown is covered by U. S. Patent 2,412,845—Ed.*



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b. Vari-speed drive for main reel for increased flexibility.

c. A size and type for any piece dyeing or bleaching requirements.

d. A tight top enclosure which is windowed and lighted, saves up to 35% of steam for the dyeing cycle. Entire Kettle may be insulated if required.

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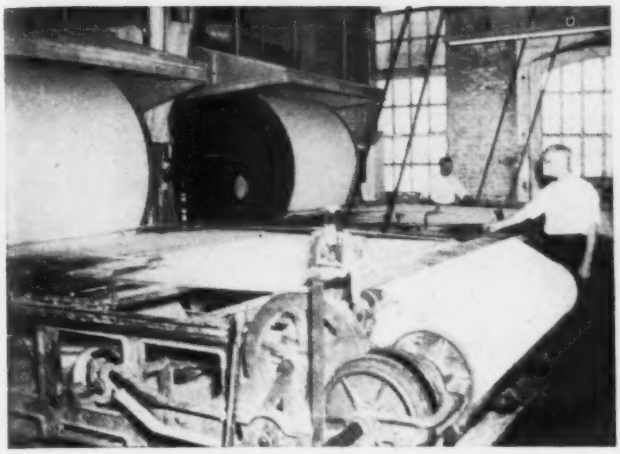

Some control of stretch *can be had by regulating the amount of cloth used on the delivery roll.*

Slasher Waste at Section-Beam Runout	
Yarn number	7.90
Number of ends	1.470
Beams per set	6
Weight per beam (lb.)	576
Weight of yarn per yard (oz.)	72.2
Soft waste per section beam (lb.)	0.58
Sized waste, 3-cylinder slasher (lb.)	2.16

Only 0.17% waste *resulted from this set of coarse cotton when care was taken.*

Alabama Mill Men Explore SLASHING PRACTICES

HIGHLIGHTS: *Wound-yarn covers for squeeze rolls prevent roll marks and chafing—Multimotor slasher drives permit more yarn to be placed on beams—Lease string may cause broken ends and excessive drying of warp.*

THE SUCCESS with which squeeze rolls covered with rubber or other synthetic material can be run on slashers depends largely upon the composition of the cover and the amount of weight placed on the rolls. If the cover is too hard, it will flatten the yarn too much and tend to leave an insufficient amount of moisture and sizing in the yarn. If the cover is too soft, it will not remove enough moisture from the yarn and, in some instances, may permit the yarn to be pulled between the rolls.

This information was revealed in answer to the first of six questions on slashing discussed at the spring meeting of the Alabama Textile Operating Executives, in Auburn, Ala. [Data given in answer to six questions on weaving practices appear elsewhere in in this issue.]

One mill reported that the rubber cover with which it experimented first was too hard. This cover was replaced by another, which proved to be too soft. The top squeeze roll weighed 350 lb., and no extra weight was placed on it. After the second rubber cover was found unsatisfactory, the mill returned to the use of wool squeeze-roll blankets.

A rubber cover was tried on the front squeeze roll at Mount Vernon-Woodberry Mills, Inc., Tallassee, Ala., L. D. Sayers reported. Extra weight was placed on each end of the roll, but the cover did not perform satisfactorily. It was taken off the front roll and placed on the back roll, where it performed satisfactorily.

EXTRA ROLL WEIGHT. Another mill reported that it tried a rubber roll cover on the back squeeze roll for a period of 3 mo. Extra weight totaling 430 lb. per side was placed on the roll. Trouble developed with one selvage of the cover. This trouble was corrected; and the cover was moved to the back roll, where it has now been in service 15 mo.

Blisters developed on the rubber cover used at Fairfax Mill, West Point Mfg. Co., E. L. White reported. The cover was composed of two plies, a bottom ply of black rubber and a top ply of white rubber. Blisters appeared between these plies after the cover had been in operation for a period of 3 wk. These blisters were punctured, but the surface of the blistered sections of the top ply would not return to its original position. The cover was tried with extra weight totaling 500 and 700 lb.

The rubber also had a tendency to split and tear off, George Harris, also of Fairfax Mill, stated.

Yarn-wound squeeze rolls are preferred to blanket-covered rolls at Pepperell Mfg. Co., Opelika, Ala., Jack Gross reported. Wound-yarn covers prevent roll marks and chafing usually obtained from blankets, and the yarn covers do not fail so readily as do blankets under high slasher speed. Wound-yarn covers are therefore less expensive than blankets.

This type of squeeze-roll cover has been used exclusively (except for experiments with other types of covers) at Mount Vernon-Woodberry Mills for the last 6 yr., it was reported. The back roll used by this mill weighs 350 lb. and the front roll weighs 800 lb. The rolls are wound as follows:

6 ends of 10s jute, wound dry, 3 rounds

3 ends of 8s cotton, wound wet, 2 rounds

2 ends of 8s cotton, wound after wetting in boiling water, 2 rounds.

More size is left on the warp yarn by freshly covered rolls than by rolls that have been running some time with the same winding. If less size is desired in the warp, more windings are made with the cotton yarn.

STRETCH CONTROL. Control of stretch is obtained at Dwight Mfg. Co., Alamaba City, Ala., by regulating the amount of cloth used on the de-

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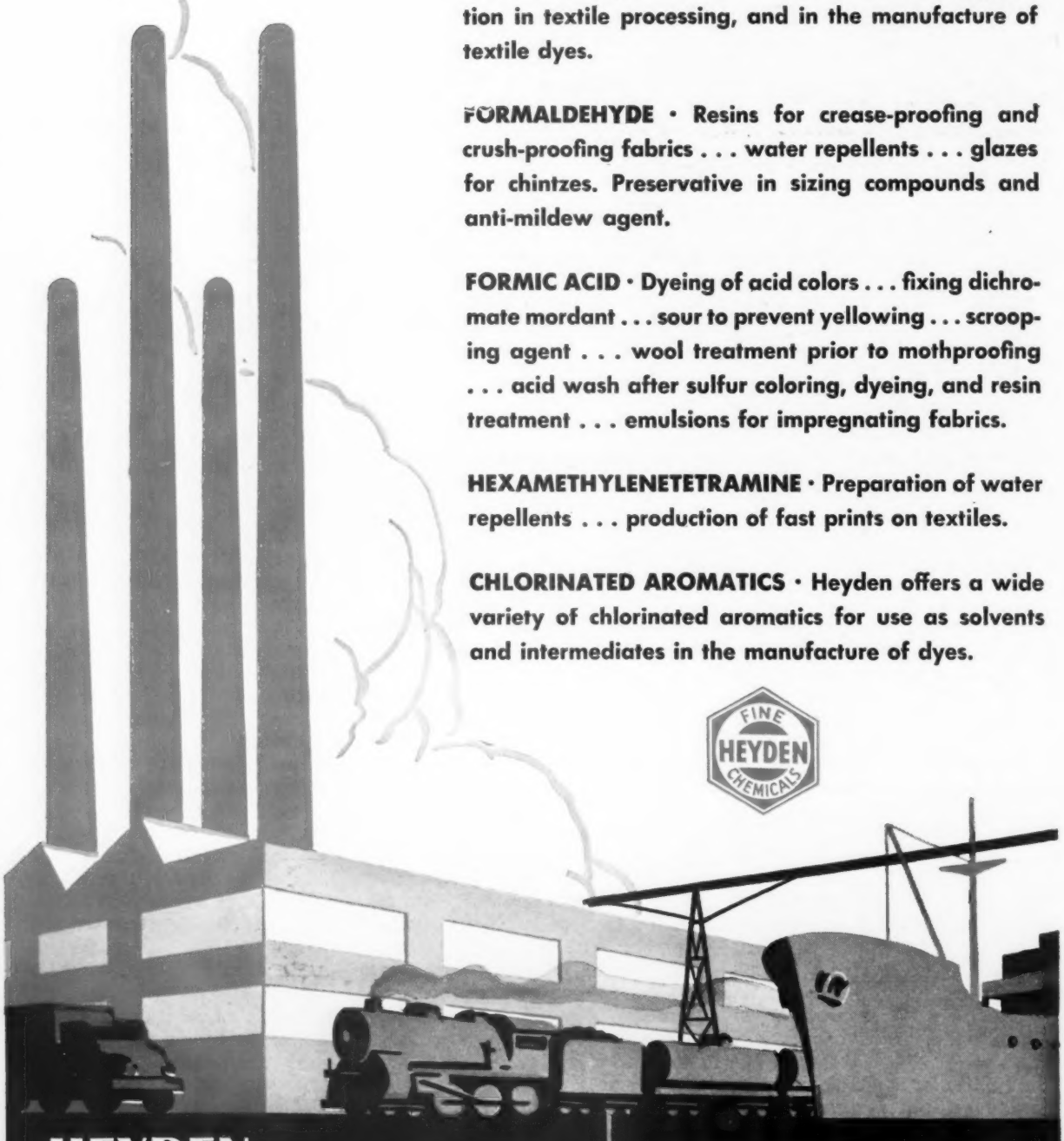

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livery rolls between the section beams and the size roll and between the cylinder and the take-up beam. Tension is increased or decreased at these points by adding or removing cloth, S. L. Long reported.

Some time ago, this mill installed a multimotor drive on one of its slashers. Very good service was obtained from the drive, and the mill is now installing these drives on all its slashers.

Another mill that uses multimotor drives reported that it has found the drives more satisfactory than friction drives. More uniform tension can be maintained on wide slashers, more yarn can be placed on a beam, and better-running warps can be made with the multimotor drive, a representative of the mill stated. Motors on the size box and delivery rolls are hooked together; and in addition to the other advantages cited, the mill also realizes a slight saving in power consumption.

The average amount of waste made in the slasher room at Dwight Mfg. Co. is 0.30%, C. H. Moody, superintendent, said. The average per section beam is approximately ½ lb. On section-beam runouts, there is usually an average of 18 yd. of yarn left on each beam. The average yarn number slashed at this mill is 12s.

The amount of waste made on section-beam runouts at Langdale Mill, West Point Mfg. Co., has been reduced by the use of a positively driven section-beam creel. At this mill, the section beam rides on the drum and feeds yarn to the size box.

LEASE STRING USED. One mill reported that on section-beam runouts it has a slasher helper stand at the back of the slasher and look for the first end of yarn that appears. A lease string is placed in the warp at this point, and the warp is run until the lease string reaches the take-up roll. In this way, a good bit of waste yarn is saved.

A lease string is run on every slasher set at Opelika Textile Mills, Inc., Opelika, Ala., if there is trouble with ends out of lease in the weave room, it was reported. If no trouble is encountered with ends out of lease, the practice is to run a lease string each one to four sets. The average warp number sized is 14s.

Another mill reported that its practice formerly was to run a lease string on each fourth loom beam. However, it usually found from one to three ends out of lease and began running a string each one or two beams. Some improvement in the number of ends out of lease was noted. If laps occur on the section beams, a string is run on each beam.

OFFICERS ELECTED at the spring meeting of the Alabama Textile Operating Executives, in Auburn, Ala., were:

***A. D. ELLIOTT,** Huntsville, Ala., general chairman, succeeding E. H. Lehmann, superintendent, Langdale Mill, West Point Mfg. Co., whose term expired;*

***C. H. Moody,** superintendent, Dwight Mfg. Co., Alabama City, Ala., vice-chairman, succeeding Mr. Elliott.*

Members elected to the executive committee were:

***Fred Lyon,** Opp, Ala.; **R. L. Rearden,** Langdale Mill, West Point Mfg. Co.; **H. M. Clark,** superintendent, Pell City Mill, Avondale Mills, Pell City, Ala.*

One to three strings are run on each warp at Opp Cotton Mill, Opp, Ala., it was reported.

Strings are run when necessary at Avondale Mills, Sylacauga, Ala.; but instead of setting a frequency for running strings, the mill makes it the responsibility of the slasher tender to run strings as needed to keep the ends properly in lease. An excessive number of lease strings is avoided, particularly on fine yarn numbers, because of the possibility of a string causing broken ends.

Running lease strings is avoided as much as practicable at Pepperell Mfg. Co., Robert Horsley reported, because of the excessive drying given the yarn on the cylinder while the slasher is stopped for drawing a lease string. The moisture content of this section of yarn drops as low as 3%, it was said.

SIZE STORAGE. Storing size over a week-end does not significantly affect the running of the warps slashed with it, Mr. Moody stated. At Dwight Mfg. Co., slasher size has been stored for 36 to 48 hr. In every instance, warps slashed with this size ran as well as warps slashed with new sizing; and in two tests, they ran better. There is a tendency, however, for the size content of the warp to be lowered. In some cases, the content was lowered as much as 1.0%.

The stored size was maintained at a temperature of 195° F. by a closed steam coil. The size was agitated once an hour during the storage period.

There is a loss in the viscosity of slasher size, regardless of whether the size is permitted to stand or is circulated, J. M. Jackson, assistant superintendent, Columbus Mfg. Co., Columbus, Ga., stated. This loss of viscosity was indicated in numerous tests with a viscosimeter on size that normally yields a 13 to 13½% pick-up.

Another mill reported that it has found that too many lumps develop in the size, as a result of congealing, if the size is stored over a week-end. These lumps will not return to liquid form when heated. Thus, they interfere with size penetration in the yarn.

Pacolet Refrigerates Spinning Air-Conditioning

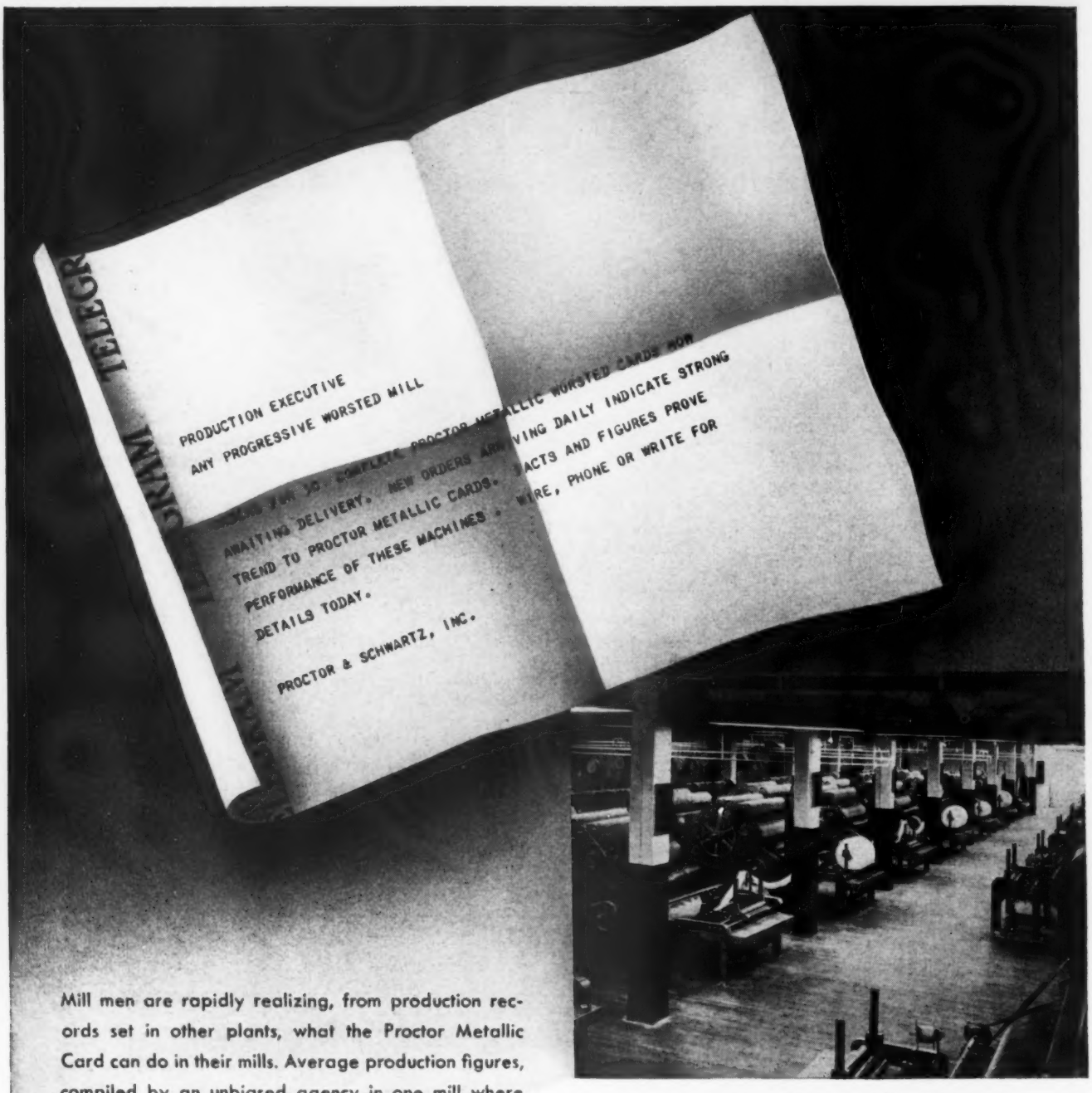
(*Continued from page 121*)

temperatures and to control the humidity. In the spring of 1946, Pacolet installed Carrier's combination air-conditioning and refrigeration system.

At first, a relative humidity of 60% and a dry-bulb temperature of 80° F., were tentatively selected as the standards of conditioning desired, since most cotton mills for years have used the 55 to 60% range of humidity in cotton spinning. However, Pacolet decided that improvements might result from lower relative humidity; and the conditioning control was reset to 55% r.h. The improvement in operation of the basement spinning room was so apparent that the mill finally set the control at 50% r.h., continuing the temperature standard of 80° F. As a result, further gains in spinning operation were noted.

It is estimated that the ends-down per thousand spindle hours range from 20 to 30; and during TEXTILE WORLD's inspection of the Pacolet basement spinning room, a total of only two ends-down was observed in the entire room.

PROBLEMS DIFFER. Pacolet Mfg. Co., however, desires full experience and further testing of the system before attempting to evaluate its effectiveness fully. The company stresses the fact that every air-conditioning problem is a separate problem; and that its basement-spinning problem was an extraordinary one. The specific solution in this case would not of course be applicable in every detail to the industry as a whole. The fundamentals, however, are of broad application.



Mill men are rapidly realizing, from production records set in other plants, what the Proctor Metallic Card can do in their mills. Average production figures, compiled by an unbiased agency in one mill where Proctor Metallic Cards replaced older machines, reveal output increases of 185% per card. Average production per card, per hour, jumped from slightly more than 32 pounds to nearly 93 pounds. The survey further revealed that not only did production increase materially, but quality of carded wool was actually improved. For a greater yield of top and other salable carded wool, from the same amount of scoured wool, the record of Proctor Metallic Worsted Cards is unequalled. No wonder the trend continues so steadily. It will pay you to investigate the details of these Proctor Metallic Worsted Cards, today.

View in the card room of Cleveland Worsted Mills where the shift to Proctor Metallic Cards has been completed. The entire room is now complete with 18 of these latest type cards—with 6 more on order and in the process of building. The production record established by these machines in this mill is available to those who write.

P & S

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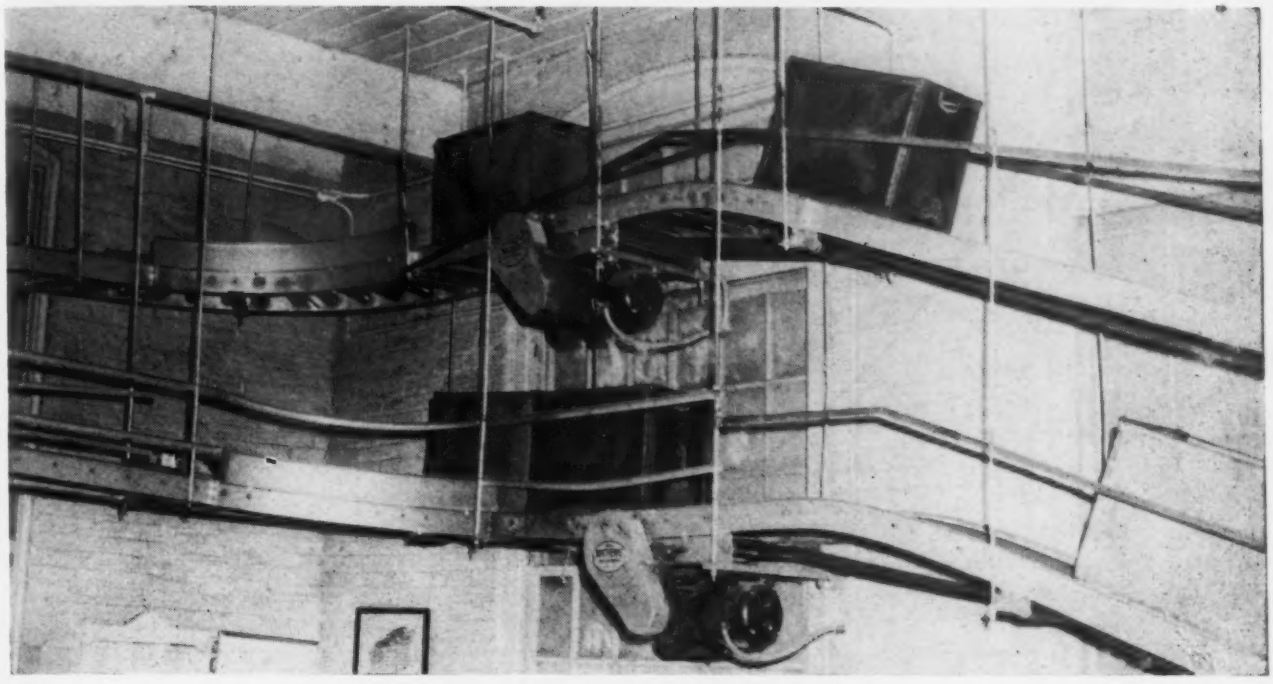

1. *In the ceiling of the spooler room, the double-conveyor system turns a corner. Note that declining roller conveyors are used to effect this curve. Belt conveyors bring the boxes to the curve at a speed which will carry them down and around the roller or gravity conveyor. The all-steel conveyor frames are held by ceiling supports. The over-all width of the conveyor is 20 in. Width between walls (or length of rollers) is 17 in. Belts are 14 in. wide, 4-ply, and are made from fabric woven at the Reid mill.*

CONVEYOR Cuts Handling And Saves Floor Space

AN UNUSUAL COMBINATION of automatic belt and gravity conveyors cuts the cost of handling yarns between the spinning and the Barber-Colman spooling departments at the United States Rubber Co. Reid Mill in Hogansville, Ga. Employee fatigue is reduced; and doffer's convenience, a critical point in the spinning room, is increased.

As shown in the accompanying photographs, the yarn conveyor begins in the center of the second-story spinning room, cuts through the floor, circles in the ceiling over the twisters, proceeds along the wall to the end of the mill, circles again and descends to the spooler-room floor. A separate conveyor for empty yarn boxes follows a similar route back to the spinning room.

The lower conveyor, shown in Fig. 2, carries full boxes of yarn to the spooler room. Spinning doffers slide the boxes onto the belt of the lower conveyor without lifting, and remove empty boxes from the top conveyor, which is at a convenient height. The conveyor system saves valuable doffer time. Formerly, the doffers ran their boxes the full length of the spinning room and dumped the yarn into other wooden containers which were transported via elevator to the spoolers. Under the present system, the loading end of the conveyor is located in the center of the spinning room. This arrangement permits a shorter run for the doffers and eliminates the dumping altogether.

HIGHLIGHTS: *Automatic 40 ft.-per-min. conveyors replace elevator handling yarns at United States Rubber Co. plant — System connects center of spinning room with Barber-Colman spooling department—Yarn and returning boxes travel 340 ft. along ceiling and walls of mill, freeing floor space.*

By H. R. MOORE

Industrial Engineer

United States Rubber Co., Hogansville, Ga.

The storage feature of the conveyor is unique. Up to 14 empty boxes can be stored at the spinning-room end of the upper conveyor, but as soon as the fourteenth box is brought to the surface of the storage area, further feeding of empty boxes from the spooler room is stopped. This useful provision is effected by an automatic electric switch. As the fourteenth box reaches the location of the switch as shown in Fig. 3, the weight of the box depresses and holds down a roller attached to the lever which actuates the switch.

At the spooler-room end of the conveyor, an operator removes the yarn box by sliding it onto a dolly, pushes the dolly to the spooler, and dumps the yarn. He places empty boxes on the upper conveyor, which returns them to the spinning room where they are again filled.

Storage spaces in the spooler department are similar to those in the spinning room. Fourteen full boxes of yarn may be stored within easy reach,

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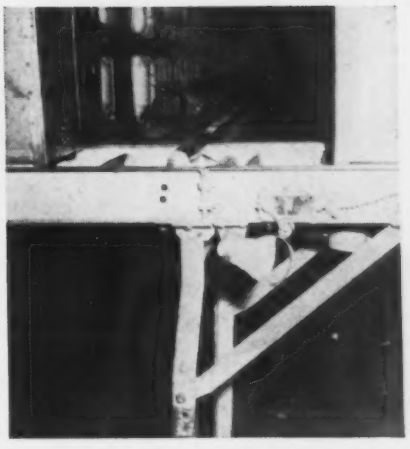
2. *Spinning doffers are saved valuable time by the location of the automatic conveyor in the center of the spinning room. Formerly, doffers took boxes the entire length of the spinning room and dumped the yarn into wooden containers which were transported by elevator to the spooler room on the floor below. Now, the doffers go a short distance and merely slide the full box of yarn onto the bottom conveyor (which at this point is a belt conveyor). Doffer in background is removing an empty box which has been returned by the top conveyor from the spooler room. This combination of double conveyors, the top for returning boxes and the bottom for outgoing yarn, solves the problem of handling between the spinning room and spooler room at the Reid Mill of the United States Rubber Co., Hogansville, Ga. Top gravity-conveyor section holds 14 boxes in storage.*



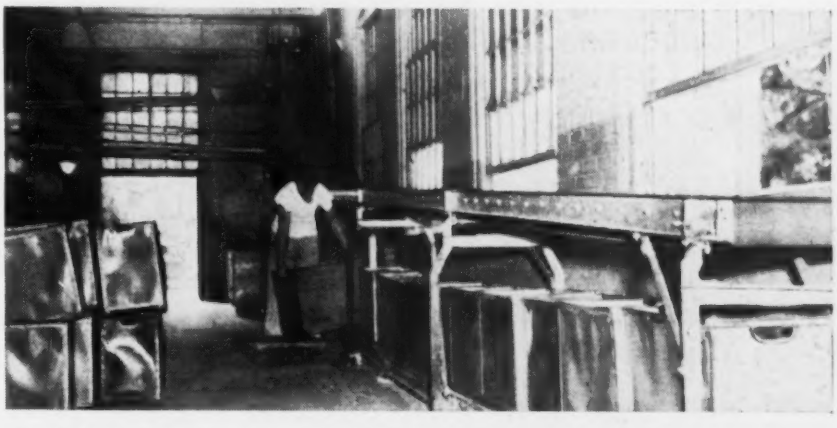
3. *A close-up of the electric switch which controls the storage of empty boxes in the spinning room. As empty boxes are returned by the belt conveyor (not shown), they pass over the actuating bar shown immediately above the electric switch. When the bar is depressed and held down, the switch operates to stop the feed of the belt conveyor. Thus, as long as there is room on the storage conveyor (to the left), empty boxes will continue to pass over the bar and fill the storage space. But 14 boxes is the limit of this space, and when the fourteenth box reaches the actuating bar, it stops there for lack of space ahead of it.*

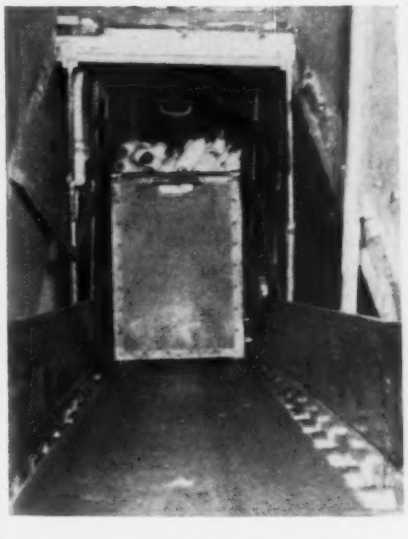
and an electric switch controls the supply of yarn to that area.

Actually, the entire length of the two conveyors may be used by the mill as storage space for full or empty boxes in case this is necessary; but the essential difference between present storage and former storage is that, under the conveyor system, the ceiling spaces are used for storage, thus avoiding a concentration of boxes on the floor.

CONVEYOR BELTS. The conveyors were manufactured by the Matthews

(Continued on page 208)

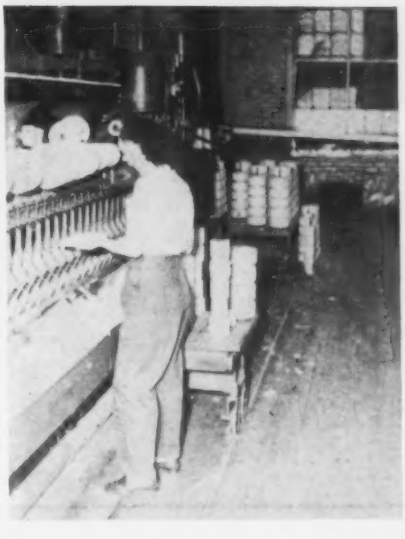




4. *A box of yarn is removed from the lower conveyor to a small dolly. Yarn dumper pushes dolly a few feet to the Barber-Colman spoolers and dumps the yarn into storage troughs. In the background, the top belt conveyor, which returns empty boxes, makes a steep incline. An arrangement of guide rolls permits a continuous belt to be used for both the gradual incline visible in the foreground and the sharper incline shown in the background.*

5. *A close-up (left) of a full box of yarn being carried by the belt conveyor down through the floor of the spinning room to the ceiling of the spooler room below.*

6. *Condition of the automatically conveyed yarn when it gets to the spooler is considerably better, according to the Reid Mill management, than before. Yarn has been handled less, contains fewer tangles. The end of the conveyor is in the background.*



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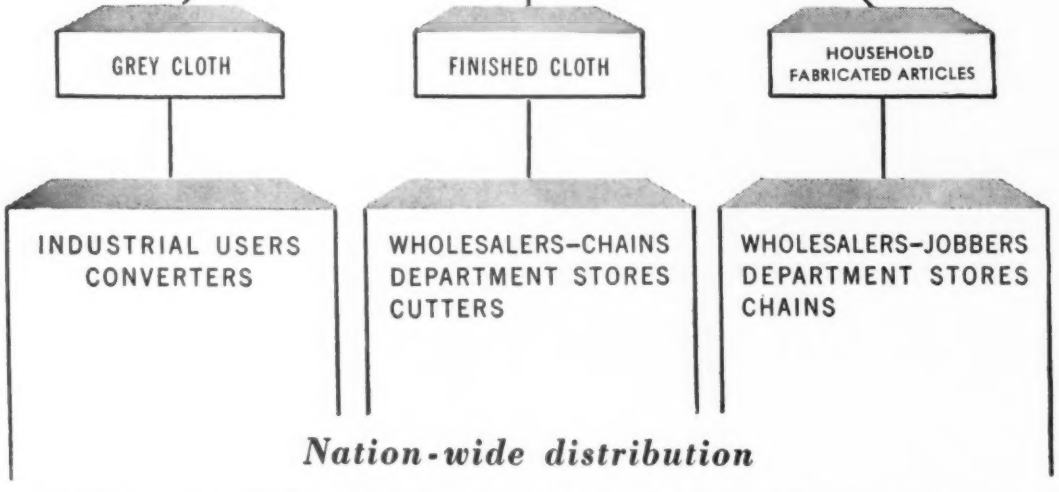

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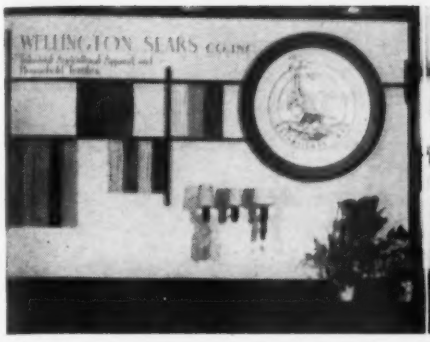


Wellington Sears Co. stressed its brand and a selection of its products in a booth designed by Wells-Poeter, New York.

Schwarzenbach Huber Co. emphasized its international character by including fabrics from its related European companies.

American Viscose Corp. intrigued the public with gold-fish-bowl manufacture of viscose rayon.

TEXTILE EXPOSITION
Fills Grand Central Palace

***HIGHLIGHTS:** Two-week show attended by 65,000 persons—Representative mills, finishers, converters, etc. had booths—Next similar show set for June 7 to 12 next year.*

THE INTERNATIONAL EXPOSITION OF TEXTILES in New York was a great show. It played for a full two weeks to big audiences. It was well supported by the primary textile industry; and many of the largest mills, selling agencies, finishing plants, and converters occupied prominent spaces with artistically designed backgrounds for the display of their products.

The audience comprised representatives of garment makers, retailers, wholesalers, chain stores, specialty shops, exporters, foreign buyers, etc., the largest proportion being from areas outside of New York.

The Grand Central Palace, which in the course of time houses the automobile show, motor boat show, flower show, and other large and well known displays, was a virtual sell-out on space. The first two floors were devoted chiefly to fabrics and finishes, the third floor to garment-making machinery and accessories, and the fourth floor to fabric exhibits by makers from overseas, Italy, Holland, France, England, etc.

SHOW WILL BE REPEATED. Although held at a time when wholesalers and retailers were inventory-conscious and consequently sluggish as buyers, there was reported to have been a reasonable amount of business done at the show. Numerous new and worth-while contacts were made which promise wider markets for the exhibitors in the future.

The show outdid most of the Grand Central Palace shows in that it stayed two weeks—the first restricted to trade, with admission only by identification and at no cost; the second open to the public at $1.20 a head. As a public educator in brands, qualities, and mill names, the effects of the second week should be highly valuable but hard to measure immediately. Attendance totalled 50,000 for the trade week and 15,000 for public attendance in the second week.

For an industry that is rapidly becoming public-relations minded, the effort was an economical approach to a highly concentrated audience. Now that the show has been held, the class of attendance and the successful methods of display are more clearly evident and many interested in the public-relations side of the industry as well as those in sales promotion are confident that this event will be an annual feature. They recognize in it a tool for adaptation to the individual programs of textile houses. Already the Grand Central Palace has been engaged for June 7 to 12, 1948, for the show next year, and there are many advance reservations of space.

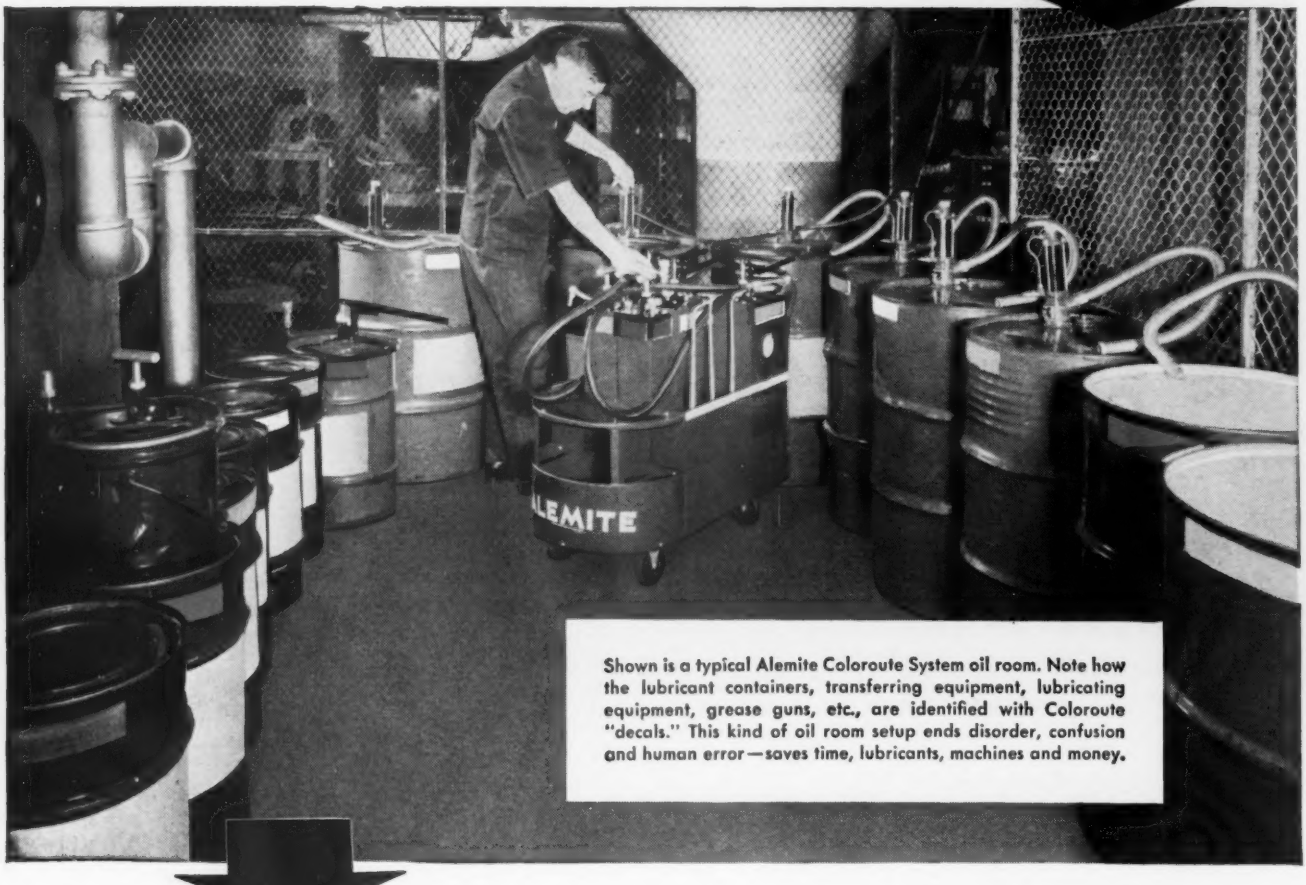
TYPICAL EXHIBITORS. Many of the big names in textiles were present at the recent show. The following are taken at random from the list of 426 exhibitors as typical:

Mills and Selling Agencies: Pacific Mills, Wellington Sears Co., Stunzi

(*Continued on page 208*)

Cotton-Textile Institute beat the drum for cotton with a graphic presentation of its qualities and uses.

Good Lubrication starts with an orderly oil room like this



Shown is a typical Alemite Coloroute System oil room. Note how the lubricant containers, transferring equipment, lubricating equipment, grease guns, etc., are identified with Coloroute "decals." This kind of oil room setup ends disorder, confusion and human error—saves time, lubricants, machines and money.

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Here's all you do. Make a check on your oil room right now. Then, think how much more efficient a new arrangement would be—how much an identification system would help to eliminate errors. Tell us how many types of greases and oil you use—or the number of "decals" you want. Give us the approximate number of containers, lubricating equipment, guns and other items you use.

Here's what Alemite will do. Fill in the coupon with the full information. We will then send you the Coloroute "decals" you need along with suggestions on how to design and operate an orderly oil room.

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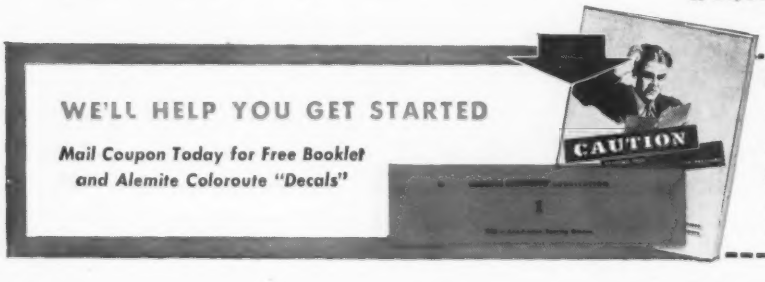

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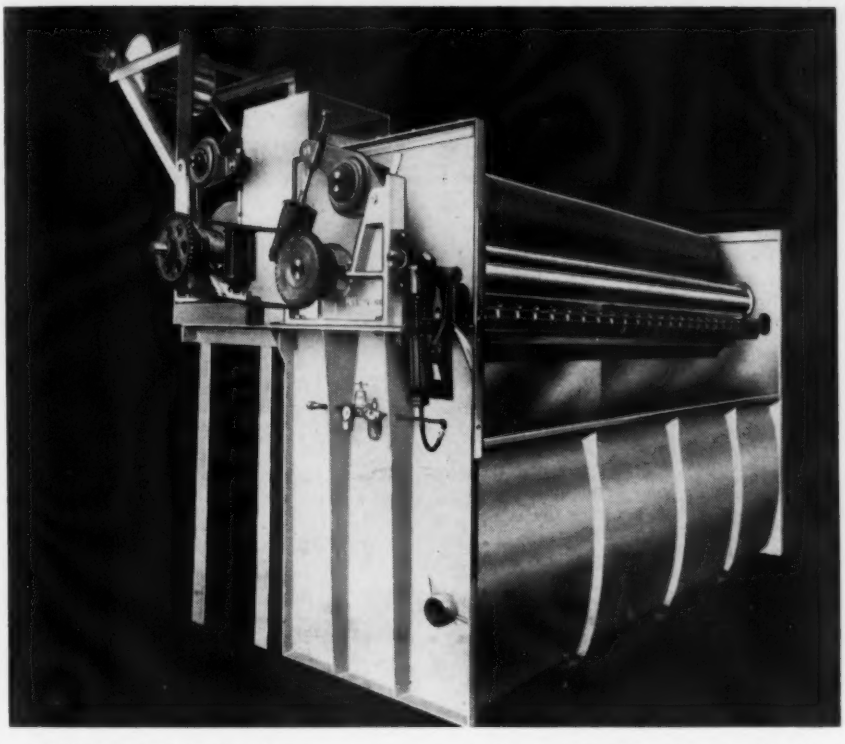
TEXTILE Equipment NEWS

Tight-Strand Washer Utilizes Stainless Steel



Tight-strand washer has three compartments and utilizes counterflow of water. (Hunt)

Several important improvements in tight-strand washing are being claimed for the new washer of Rodney Hunt Machine Co., 47 Mill St., Orange, Mass.

The three-compartment tub uses Hunt's patented "curve-of-strength" principle and is designed to cause a continuous counterflow of water.

Features include rubber-covered rain rolls using "Wring-Master" pneumatic pressure controls, a similarly controlled bleachery squeeze at the delivery end, and a stainless-steel pin rail that reduces by means of a pneumatic reciprocating device any tendency of the rolls to groove.

Fabrics weighing up to 1½ yd. per lb. have been handled at speeds up to 300 yd. per min., the manufacturer claims.

New Roll Covering Conducts Electricity

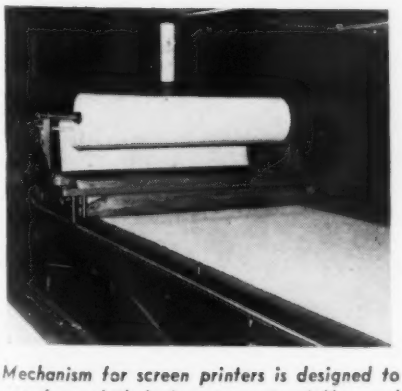
"Duscot," a new roll covering material developed specifically for textile applications, is being distributed by W. D. Dodenhoff Co., of Greenville, S. C., and Maywood, N. J. Sales of the material follow 2 yr. of mill tests. In one test, cots were reported still running without buffing after 6,000 hr.

The material is reported to resist oil and heat and not to swell. The rolls conduct electricity and thus reduce static. They are said to be a chemical combination of a synthetic rubber and another plastic.

Direct Reading of pH Possible With New Meter

A portable, industrial-model, direct-reading pH meter announced by Cambridge Instrument Co., 3111 Grand Central Terminal, New York 17, N. Y., can be used for continuous indication or for periodic checking. It operates from 110-v., 50- or 60-cycle,

This direct-reading pH indicator weighs only 10 lb. It can be mounted with hooks shown or placed on a flat surface. (Cambridge)



Mechanism for screen printers is designed to speed up cloth laying, prevent wrinkles, and improve alignment. (Spinelli)

Positioning Machine For Screen Printers

A new, simple machine manufactured by Spinelli Machine Co., 28-30 22nd Ave., Paterson 3, N. J., is designed to lay cloth accurately on screen-printing tables. Its use prevents wrinkles, is speedier than hand laying, and permits better register, the manufacturer states.

The machine features ball-bearing construction, an adjustable tension bar, two solid-wood positioning rollers, a self-adjusting roller guide rail bearing device, and a locking mechanism.

a.c. current and is claimed accurate to 0.10 pH in the range from 0 to 14.

Only two operating adjustments are required for standardization, and recalibration is reported as seldom required oftener than once a week. Compensation for variations in solution temperature from 0 to 100° C. is automatic.

The electrode assembly is integral with the meter and is protected by being mounted on the inner side of a door of a compartment in the case. Improved galvanometer and electronic-circuit design is claimed.

Two-for-One Twister Exhibited at Marcus Hook

The German Barmag two-for-one twister exhibited last month at the Textile Research Dept. of the American Viscose Corp., Marcus Hook, Pa., operates on an old principle, but one which has been used commercially only a very little in the United States. It inserts two turns of twist for each evolution of the spindle.

The Barmag unit is a type used in Germany (and to a small extent by Dunlop in England) principally for twisting tire cord and was found when U. S. technicians investigated German technology following VE-Day. (TEXTILE WORLD, April, 1946, p. 198.) The Barmag machine is made in three sizes for twisting fine yarns up to heavy cord. It differs from the two-for-one twister discovered and described by Ernest Geier. (See TEXTILE WORLD, April, 1946, p. 123.)

The Barmag units pictured have been inspected by U. S. textile machinery manufacturers, two of which, at least, are known to be working on machines using the same principle.

Over ten years ago, there were at least two makes of two-for-one twisters in operation in the United States for throwing silk and rayon knitting and weaving yarn; but their manufacture was stopped.

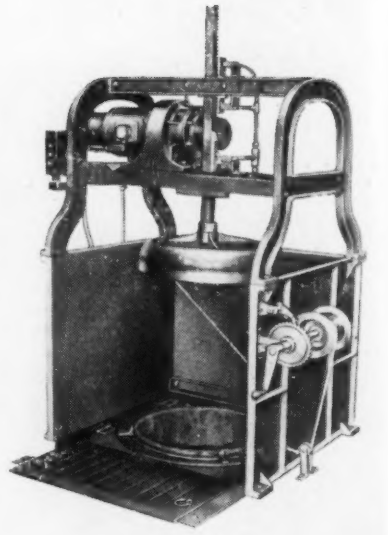
The Barmag machine is described by Capt. J. L. Truslow, USNR, and Robert M. Jones in FIAT Final Report No. 473 of Nov. 21, 1945. This report, originally restricted, states that the twister for fine yarns is built double-deck, 40 spindles to a deck, each side, 160 to the machine. Spindle speeds are reported as 4,500 to 6,000 rpm., the equivalent of 9,000 to 12,000 rpm. on standard U. S. machines. Heavier machines for twisting doubled yarn run at 5,500 to 6,000 rpm. on single-deck machines of 160 spindles. Cable twisters are reported to have 48 spindles to a machine and run at 4,500 rpm.

Bagging Machine Has Pressure Control

An improved electrically driven bagging machine, Model No. 42, being built by C. G. Sargent's Sons Corp., Graniteville, Mass., is fully automatic in regard to travel of plunger and amount of pressure applied.

In use, an operator suspends a bag from a floor ring, fills the bag (such as with loose wool), and pushes a "down" button. A plunger compresses the content to a predetermined pressure and then automatically returns to neutral position.

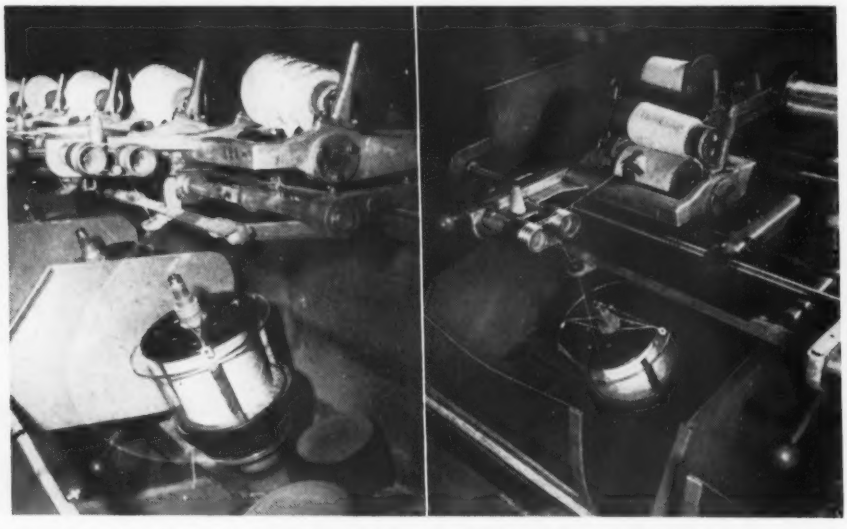
A windlass drum crank is used to raise the top of the bag for sewings, after which the platform can be lifted on hinges so that the bag can be hoisted out.



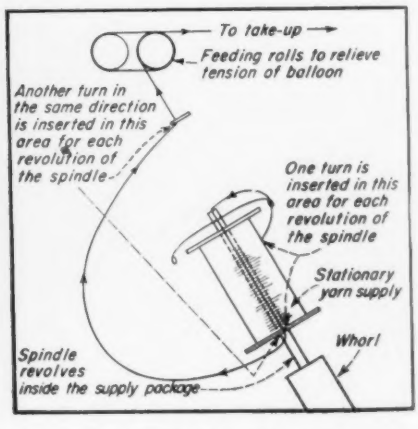
Pressure of the plunger in this bagging machine is preset. Crank lifts bag for sewing. (Sargent)

All-Purpose Tool Uses Impact Principle

A new universal electric, all-purpose impact tool was introduced last month by Ingersoll-Rand, 11 Broadway, New York 4, N. Y. It uses standard attachments to apply and remove nuts, drill, ream, tap, drive and remove screws, drive and remove studs, extract broken



Barmag twister for single ends delivers yarn to bobbin take-up. Spindle speed is 4,500 to 6,000 rpm. but, due to two-for-one principle, produces 9,000 to 12,000 turns per minute. At left is a cable twister which operates on same principle, but which builds a cone. Both photos show the machine in operation; on the cable twister can be seen the balloon of the yarn. Double sets of rolls above the spindles are for delivering the yarn to the take-up to counteract tension set up by the ballooning. (Barmag)


To take-up
Feeding rolls to relieve tension of balloon
Another turn in the same direction is inserted in this area for each revolution of the spindle
One turn is inserted in this area for each revolution of the spindle
Stationary yarn supply
Whorl
Spindle revolves inside the supply package

This TEXTILE WORLD sketch shows how the two-for-one principle produces each of the two turns. An advantage of using this principle is that the yarn supply does not have to be revolved; only a short length of the yarn need be.

What's in a Cone?

"Paper," you say, and that would be right, if you qualified the statement to include a laboratory formula—especially developed from nearly 50 years of experience. And to that description you should then add a binder, a treatment, and even a special machine—several machines in fact—and still you could go on, if accurate, and recall that a finish, a color, to say nothing of a size, thickness, nose, taper—all, are a part of what's in a cone...(no specialties included) You might even wonder, "Is it worth it, for a one-time-use paper carrier?"

But of course the textile industry has been answering that question for a long time.

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DEPENDABLE SOURCE OF SUPPLY

New impact tool is being used by erector on a rubber-covering machine. (Ingersoll-Rand)

cap screws and studs, run wire brushes, do hole-saw work, drill brick and masonry, and drive wood augers.

This new machine, designated as Size 4U, weighs only 6½ lb., has an over-all length of 10½ in., a free speed of 2,000 rpm., and delivers 1,900 rotary impacts per minute under load. It is powered with a specially designed reversible, universal electric motor (3 amp.) that operates on 110 v. a.c. or d.c. current.

The impact tool runs just as any conventional electric tool until the resistance to spindle rotation reaches a certain amount. Then a patented mechanism converts the power of the motor into "rotary impacts" which exert a more powerful turning effect than is produced by any other electric tool of comparable size.

Doff Trucks Are Metal or Fiber

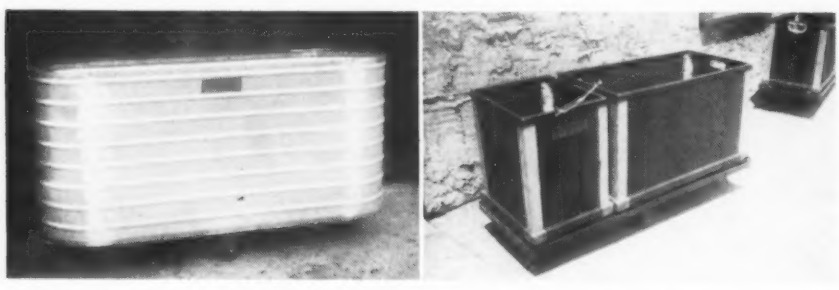
New designs in light-weight materials-handling equipment in the form of roving and filling trucks and a vulcanized-fiber doff truck are being manufactured to mill specifications by the Fisher Mfg. Co., Hartwell, Ga.

The new roving and filling truck is made of either aluminum or galvanized steel and has roller-bearing casters. The aluminum has been corrugated for additional strength, and ends of the truck are rounded for greater maneuverability. The bottoms are wood slats for cleanliness and to permit humidity absorption. The top edge of the body is rolled for smoothness. Sizes and dimensions are made to mill specifications.

A vulcanized-fiber doff truck is also made to specifications as to size. It is made with an oak bottom, reinforced with metal corners and sides. The fiber sides are riveted to reinforced rolled metal edging. The platform is oak reinforced metal. Type of casters is optional. The truck is made in two sections, stationary tight box and removable loose box.

Industrial Vacuum Cleaner

The Tornado industrial vacuum cleaner pictured handles 185 cu. ft. of air per min. with a 49-in. water lift, according to its manufacturer, Breuer Electric Mfg. Co., 5986A Roverswood Ave., Chicago 40, Ill. Heavy material falls into the 12-gal. steel tank while lint and other light material is collected in the bag. Special attachments are available. Motor and fan are removable for use as a blower, if desired.



Light-weight truck is made of aluminum or steel. Fiber truck has two sections, one removable. (Fisher)

Overhead and back through-light inspection is achieved on this inspecting, measuring, and winding machine. (Standard)

Inspection Frames Accurately Measures Cloth

A slow start and a quick stop are two of the features of the new Standard cloth inspecting, measuring, and winding machine of Standard Mill Supply Co., 1064-1090 Main St., Pawtucket, R. I. (Southern unit at Charlotte, N. C., is Southern Standard Mill Supply Co., 512-514 W. Fourth St.)

The machine can be equipped with a knife-type cloth roll when winding on tubes or with an expanding steel cloth roll when tubes are not used. The measuring clock is graduated in eighths of a yard and subtracts accurately, although the machine does not have a reversing motion. Freewheeling permits pulling back cloth when necessary. The measuring cylinder is covered with Shur Grip rubber fillet.

The plywood inspection board is adjustable horizontally and vertically. Cloth can be threaded to permit through lighting. All revolving shafts are mounted in replaceable ball or bronze bearings. Individual motor drives are ¼ or ½ hp.

New Controller Times Varied Cyclic Operations

Announcement of a new multiple-cam, time-cycle controller for timing mechanical operations in industrial processes has been made by the Bristol Co., Waterbury 91, Conn. The instrument is designed for use on plant processes involving accurately timed actuation or engaging of mechanical, electrical, or pneumatic devices according to a fixed schedule.

The mechanisms of timing and mechanical actuation are separated in order to give accurate timing of factors under control, high speed and

The Fox Terrier was originally used to drive the hunted fox from its place of refuge. Known as the "Gentlemen's Dog" this courageous little animal is often foolhardy in tackling bigger opponents.

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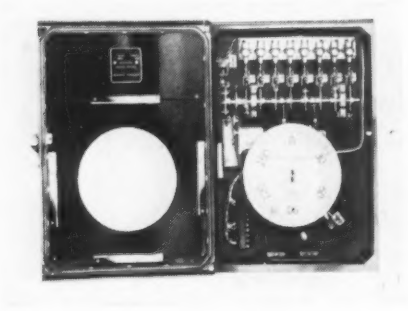


Time-cycle controller uses aluminum disk and notched time scale. (Bristol)

torque for mechanical operations, and flexibility of application.

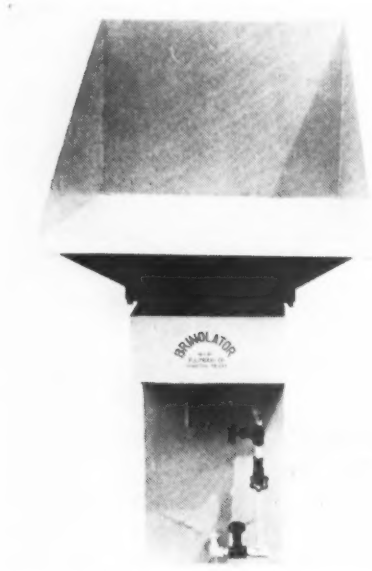
The timing mechanism consists of a Telechron-driven aluminum disk on which a 25-in. time table is printed. The desired schedule of operations is incorporated into the controller by cutting notches on the time scale. Time impulses are transmitted electrically.

All controllers are drilled for eight individually adjustable cams, and provision is made for additional cams and pilot valves.

Brine Equipment Available on Lease Basis

The "Brinolator" is a new feature being put out by the Carey Salt Co., Hutchinson, Kan., on a lease basis for the production of a fully saturated, clear, clean, pure brine, produced automatically from economical rock salt. The company supplies this equipment in sizes capable of producing from 500 to 10,000 gal. of brine daily, obtained by a combined method of dissolving rock salt without agitation, and a method of self-filtration.

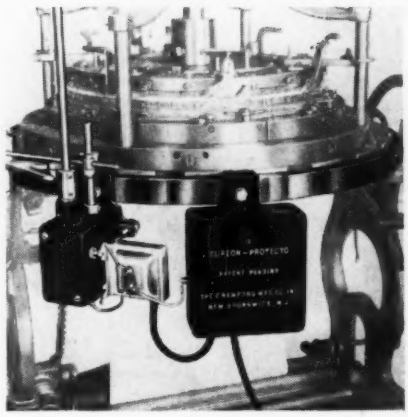
Two features which distinguish the Brinolator are a float-valve arrangement that controls fresh-water inlet and brine flow and, second, a clean-out feature. The manufacturers claim that through the use of this equipment advantages occur such as lower labor costs for handling salt, lower distribution and mixing cost for brine, savings on salt used, better brine, ease of operation.



Tubing Developed For Baling Cloth

"Jefco" jute tubing, a seamless, tubular burlap that is reported to have two-way stretch has been developed for baling cloth and is being sold by the J. E. Frick Co., 38 N. Front St., Philadelphia, Pa. It is reported to cut baling time and save costs.

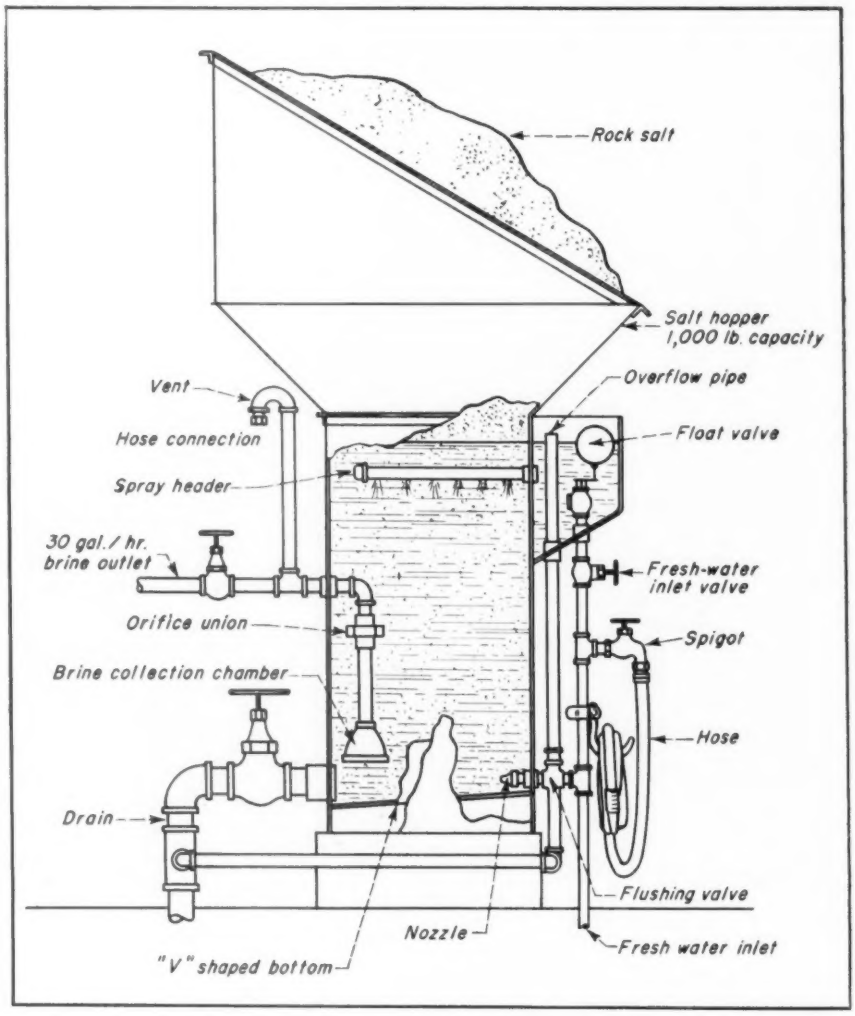
A tubing 10 in. wide can be used to cover packages from 8 to 11 in., it is pointed out. The burlap tubing is available in various sizes.



When current goes off a stop motion, this protection device stops the machine. (Crawford)

Stop Motion Protected On Knitting Machine

The Crawford Sureon-Protecto Box has been designed by the Crawford Mfg. Co., of New Brunswick, N. J., to protect a knitting machine when cur-



This brine-making equipment has simple flushing system to remove insoluble material. Sketch shows Model 1830. (Carey)

Nalex
FOR WARP SIZING COTTON YARNS

without rain togs

NALEX is a slow-congealing warp sizing starch that minimizes the use of moisture resisting tallow and similar fatty compounds. Just enough tallow is used to prevent sticking to the drying cylinders.

Remember this, any moisture resisting film on the yarn necessitates a high, uncomfortable humidity level in the weave room. Enough extra moisture must be present in the air to penetrate the water resisting film—if the starch component in the sizing is to be properly plasticized.

Conventional thick and thin boiling starches require an excessive fat complement to prevent fast congealing—and a humidity level that must be maintained at 80-90%. Slow-congealing NALEX, with its low tallow complement, requires only a 70-75% humidity.

NALEX penetrates deeper . . . is more adhesive . . . reduces shedding . . . and permits excellent weaving results—without loading the cloth with starch.

National also produces: **FLOTEX** to replace natural gums for printing; **SPUNJEL** for warp sizing spun rayon, **AMBERTEX** a heavy-bodied thickener for white discharge, direct and vat color printing; **FIBERTEX** for textile finishing; **VAT THICKENER 36** for cotton and rayon colors.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Atlanta, New Orleans, Indianapolis, Chicago, San Francisco and other principal cities. In Canada: Meredith, Simmons & Co., Ltd. Toronto and Montreal. In Holland: Nationale Zeetmeelindustrie, N. V., Veendam.

Photo Courtesy of
COTTON-TEXTILE INSTITUTE

National
STARCH PRODUCTS

STARCHES—AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

rent goes off the stop motion. If a fuse blows on the lighting line, or if the plug which is attached to the stop motion is accidentally pulled out of the socket, the Sureon-Protecto Box will instantaneously and automatically stop the knitting machine. This prevents the machine from operating without the stop motion protection and prevents serious smash-ups. This box can easily be attached to electric stop motions already in mills or to new machines.

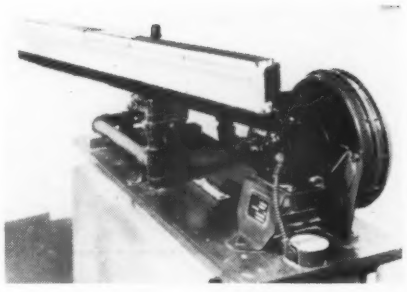
Moisture tester uses electronics and is reported accurate to ±0.25%. (Steinlite)

Moisture Determined In a Minute

Rapid and accurate determination of moisture content of textile fibers is claimed for the Steinlite Moisture Tester, manufactured by the Fred Stein Laboratories, and distributed by the Seedboro Equipment Co., of 676 Brook Building, Chicago 6, Ill.

The machine uses a small, weighed sample of the material to be tested. The sample is placed in a funnel, dropped into the test chamber, and moisture determined in 1 min. on the principle that the radio-frequency impedance of the material changes with its moisture content. Moisture percentage is determined from a dial reading converted by means of a chart and corrected for temperature.

The Steinlite tester operates on 110-volt, 60-cycle current, and can be supplied for other types of current. It is 13 in. high, 17 in. long, 9½ in. wide, and weighs 34 lb. It is claimed to be accurate to ±0.25% of the established methods against which the machine is calibrated.



Flexibility of operation is feature of portable infrared singer. (Carbomatic)

Portable Singer Uses Infrared Heat

Carbomatic Corp., 24-81-47th St., Astoria, L. I., has added a new portable model to its line of gas-fired infrared singeing units. Mounted on a movable platform, the unit can be shifted from place to place, adjusted to any position or heat focus, and used separately or as an adjunct to a fixed battery of infrared singeing or drying units.

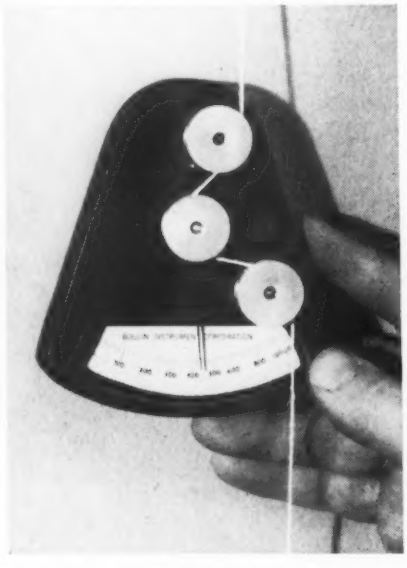
The unit is self-contained, complete with blower, gas-air mixer, and controls, and is available in various sizes of one-piece refractories.

Yarn-Tension Testers Cover Wide Range

A new series of light-capacity instruments for measuring yarn tensions has been announced by the Boulin Instrument Corp. of 65 Madison Ave., New York 16, N. Y. The Boulin Tensiometers are supplied in nine separate capacity ranges, from the lowest, 0 to 10 grams (10 grams = 0.350 oz.), to the highest, 0 to 2500 grams (5.5.lb.). The ranges, increments, and subdivisions of all instruments are shown in the following table:

Range	Increments	Subdivisions
0 to 10	1 g.	1/5 g.
0 to 25	2½ g.	1/2 g.
0 to 50	5 g.	1 g.
0 to 100	10 g.	2 g.
0 to 250	25 g.	5 g.
0 to 500	50 g.	10 g.
0 to 1000	100 g.	20 g.
0 to 2000	200 g.	40 g.
0 to 2500	200 g.	50 g.

No adjustment is required in the machine, yarn being run, or the tester in order to ascertain tension; and it is only necessary to slide the strand over the pulley and read the indicated result on the dial.



Tension testers supplied in nine models covering 0-2500 gram range. (Boulin).

Laboratory oven features accurate and automatic control of temperature within 1°C. (Huppert)

Laboratory Oven Has Automatic Controls

A new electric laboratory oven, called KH 1200 and featuring equalized heat by means of a simple double-venting device, has been announced by K. H. Huppert Co., 6830 Cottage Grove Ave., Chicago.

The equalization of oven heat is regarded as a major advance in laboratory-oven design, since simultaneously varying temperatures within the oven are reported to tend toward inaccurate test results. The automatic hydraulic-electric temperature control featured in the new furnace is said to be very sensitive. Temperature is reputedly controlled within an accuracy of 1° C. at any desired point within the furnace range up to 220° C. (428° F.). The KH 1200 oven is insulated with a 1⅝-in. thermo-block throughout for maximum heat retention and low operating cost.

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A NEW SYNTHETIC TEXTILE DETERGENT

FOR

Scouring

Dyeing

Finishing

ALL TYPES OF FIBRES

- More efficient than soap in hard water, acid, alkali.
- 1% solution has a pH of 7.3 — 7.5
- A light colored product in flake form — relatively non-hygroscopic.
- Packed in fiber drums holding approximately 225 lbs.

ARNOLD, HOFFMAN & CO., INC.

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Kinks AND SHORT-CUTS

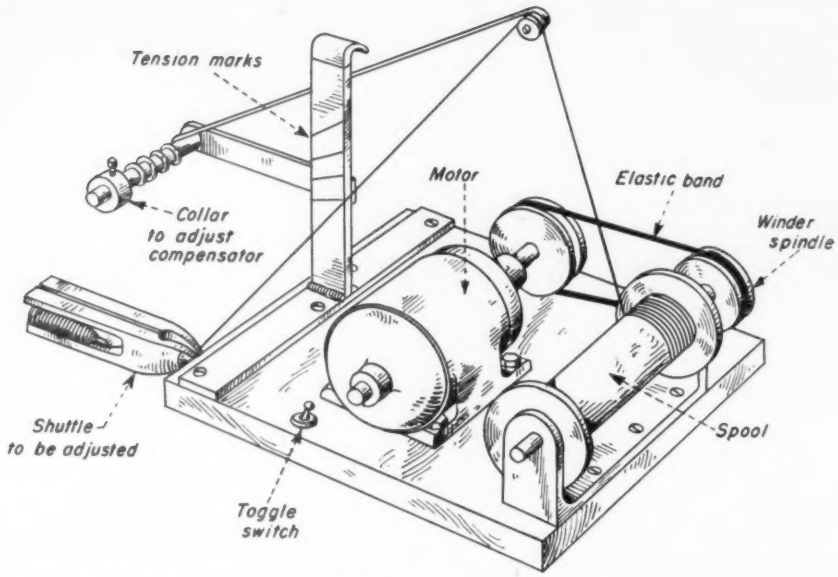
This Tension Device Aids Trimming Shuttle Fur

★*Prize Winner for July*
(May contest)

Most weave rooms that find it necessary to change looms from one count of filling to another experience difficulty in trimming the fur in shuttles in order to obtain uniform unwinding tension from one end of the quill to the other. This problem is particularly bothersome if the counts of filling are made of different deniers of synthetic fibers.

In our weave room, we change styles of cloth (and filling) so often that we found it necessary to devise some means of testing unwinding tension. The device we made is illustrated in the accompanying sketch.

A piece of board was used as a base, and at one end of the board a winder spindle and spool were mounted horizontally on a stand made by bending a piece of flat steel as shown in the sketch. This spindle is driven by a small motor secured to the base near the spindle. The motor pulley was lined up with the spindle whorl so that a direct band drive could be used.



Proper trimming of shuttle fur to obtain the correct tension on filling yarn during weaving can be obtained with the use of this testing device. Yarn pulled from the furred shuttle is passed over the tension compensator and wound on the spool. The compensator, supported by a piece of weak wire, is raised or lowered in response to the amount of tension placed on the filling by the fur. Marks on the upright indicate the points at which yarn of different counts should run. Shuttle tension from the beginning of unwinding to the end can be gaged in this manner.

At the end of the base opposite the end at which the spindle was mounted, a piece of flat steel was fastened horizontally to the wooden base. To the center of this piece of steel and perpendicular to it, a piece of bar stock was welded. A third piece of bar stock was welded to the upright so that it extended outward from the upright in order to support the tension adjusting sleeve and collar shown in the sketch.

A length of weak wire was twisted around the sleeve and bent, as illustrated, so that it extended over the winding assembly. A yarn guide was

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 SAVINGS BOND will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligibile for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

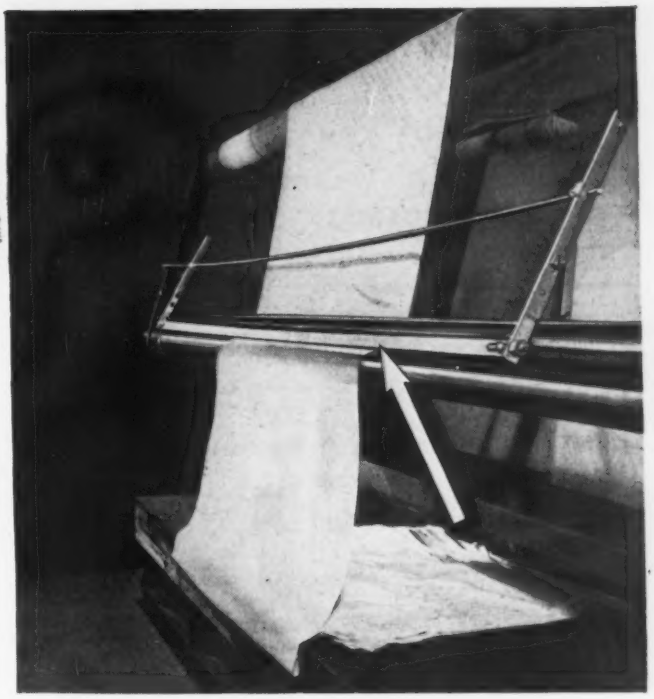
TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at regular rate for this type of matter with an extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd Street, New York 18, N. Y.

STATIC-CAUSED CLOTH SWING STOPPAGES ELIMINATED

An example of how textile static problems are being solved with the Ionotron Static Eliminator*



Arrow shows position of Ionotron Static Eliminator on Triangle finishing machine. Continuous alpha radiation ionizes the air at the zone where static ordinarily builds up. The ionized air conducts-off the static as it is generated, so there are no attraction-repulsion effects nor sparking.

Installation of an Ionotron Static Eliminator in the plant of the Triangle Finishing Corporation, Johnstown, N. Y., has put an end to cloth swing stoppages caused by static electricity — has made possible better cloth folding — and, as a result, has helped reduce total stoppages of machinery throughout the plant by 20%!

Other textile machinery on which the Ionotron is being employed to advantage includes the Peralta clearing device and the tape condenser of wool cards, and the gear box of drawing-frame delivery units. Developed only recently, the Ionotron has not yet been tried everywhere – but it promises to be the answer to static problems in many other textile operations.

Numerous production advantages – Because it eliminates bunching, lapping, and other difficulties caused by static charges in textile fibers, the Ionotron increases production by reducing the frequency of shutdowns. It also results in more uniform windings. It eliminates static problems in fabric-coating operations. It improves working conditions by permitting a substantial reduction of humidity.

Permanently effective without upkeep – By means of continuous alpha radiation from a shielded radioactive source, the Ionotron "bleeds off" static charges before they can cause trouble. Installation is simple. There is no contact with fibers or fabric, there are no moving parts, no power connection, and no operating cost! Atmospheric conditions do not alter the efficiency of the Ionotron.

How to get specific information – For details about employing the Ionotron on wool or worsted machines, write Davis & Furber Machine Co., North Andover, Mass.

For details about any other textile application of the Ionotron, send a description of the static problem to *Dept. 15, U. S. Radium Corp., 535 Pearl St., New York 7, N. Y.*

*Trade-mark reg. U. S. Pat. Off.

U S RADIUM

IONOTRON Static ELIMINATOR

KINKS & SHORT-CUTS
(*Continued from page 158*)

secured to the upper end of this tension compensator.

The testing device is used as follows: A quill of filling is placed in a furred shuttle, and the shuttle placed with the point against the wooden base, as shown in the sketch. Filling is pulled from the shuttle eye, passed over the yarn guide on the tension compensator, and tied around the spool on the twister spindle. The motor is started by throwing the toggle switch.

As yarn is wound on the spool, the tension compensator will raise or lower in response to the amount of tension placed on the yarn by the fur in the shuttle. Marks made on the upright indicate the proper tension (determined by experiments) for various counts of filling. If the yarn does not run over the upright at the proper mark, the fault is corrected by trimming the fur in the shuttle.

The use of this testing device has eliminated a good many cloth defects formerly made in our weave room. *(K-683) E. J. Pompilio, Magog, Quebec.*

Tie Worsted Warps to Rods Instead of to Canvas

We have found that strips of 1-in. heavy webbing are much more satisfactory than canvas aprons for tying worsted warps to the warp beams. If a canvas apron is tacked to the barrel of the beam and the warp ends are tied to the apron, the warper tender is faced with several problems.

When the apron gets a little old, it is apt to tear out and a strip must be cut off and new holes made. If a narrow warp is to be made, the width of the apron must be cut down or the apron removed from the beam and a new one installed.

These small difficulties are avoided in our mill by the use of webbing strips, as shown in the accompanying sketch. The webbing is cut in 6-ft. strips and tacked to the barrel of the beam at intervals of 1 ft. A $\frac{3}{8}$-in. steel rod is placed in 2-in. loops at the other ends of the strips. These loops are made by riveting the ends of the strips.

The warp ends are tied around this rod. In addition to the advantages already cited, the use of this arrangement also makes it easier to tie in the warp ends. *(K-686) Arthur Spivey, Huntingdon, Quebec*

Floating Binder Pins Replaced With Fixed Bolts

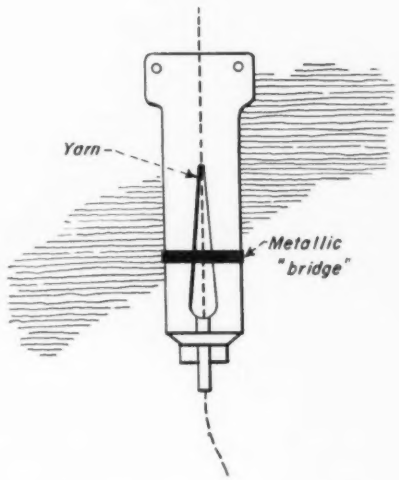
A frequent and expensive source of trouble on looms equipped with floating shuttle binders is the tendency of the binder pins to break. When a pin breaks, the binder falls out of the box and the picker wedges behind the shuttle, occasionally breaking the shuttle. Generally, such a breakdown also results in a warp smash.

If loom stoppage from this cause becomes excessive, it is a good idea to eliminate the binder pin.

Remove the binders from the shuttle box and weld 1-in. lengths of strap iron to the outside ends of the binders. Drill holes in the box where the binder springs are fastened and tap to $\frac{7}{16}$ in. At a point $\frac{3}{4}$ in. from these holes, toward the outside edge of the box, drill new holes for mounting the binder springs.

At appropriate points on the binders, drill $\frac{1}{2}$-in. holes so that bolts passing through the $\frac{7}{16}$-in. holes in the box (where the binder springs were originally mounted) will also extend through the holes in the binders. Bolt the binders to the box at these points, mount the springs in the new holes toward the outside end of the box, and discard the old binder pin. *(K-654)*

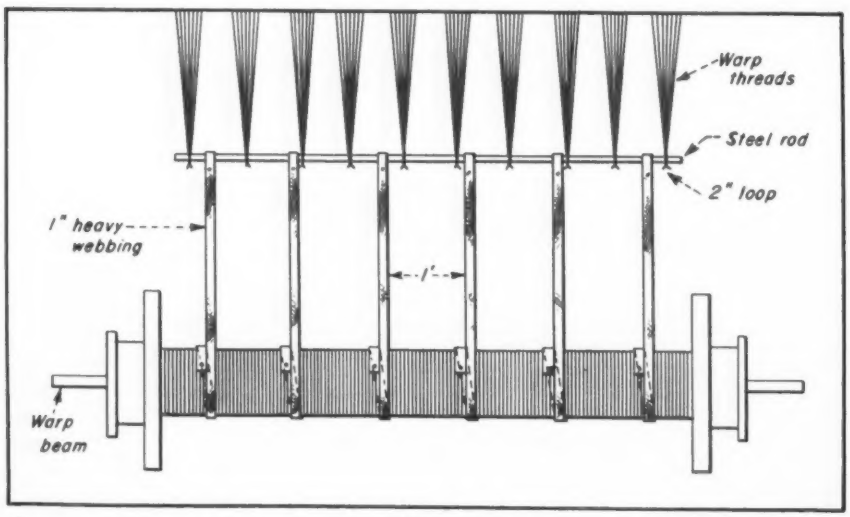
Modified Yarn Carrier Reduces Nylon Press-Offs



Surface tension created at the yarn carriers caused an excessive number of press-offs on 15-denier monofilament nylon hosiery in one full-fashioned knitting mill. This tension was reduced by soldering a metal "bridge" across each carrier to prevent the yarn from pulling across the face of the carrier. Press-offs were reduced approximately two-thirds.

The knitting of 15-denier monofilament nylon yarn into women's hosiery has resulted in an appreciable increase in the quantity of our press-offs and waste. Despite all efforts to remove tension on the yarn during knitting processes, it was found that considerable drag on this fragile yarn was still present and that much of the drag was directly traceable to surface tension.

Surface tension results, of course, from the action of the yarn moving across metallic objects. One of the chief contributors of such surface tension, we found, was the yarn carrier. The friction caused by the unsized yarn moving down the top side of the carrier created a drag that frequently broke the yarn. We corrected this condition by soldering across the center of each carrier a metallic band of the type normally used to hold the carrier



Tying a worsted warp to a beam can be facilitated by the use of 1-in. strips of heavy webbing and a $\frac{3}{8}$-in. steel rod, instead of canvas aprons. Tack one end of the webbing strips to the barrel of the beam and rivet loops in the other ends for receiving the steel rod.

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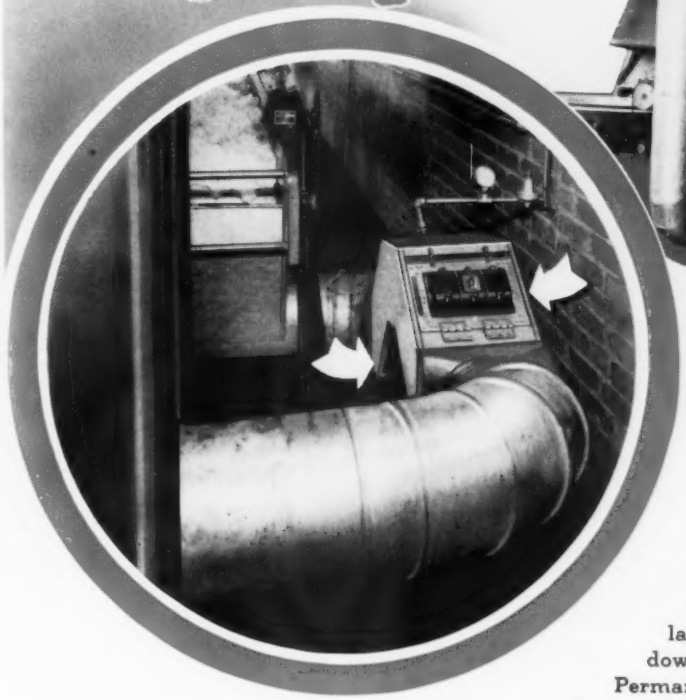

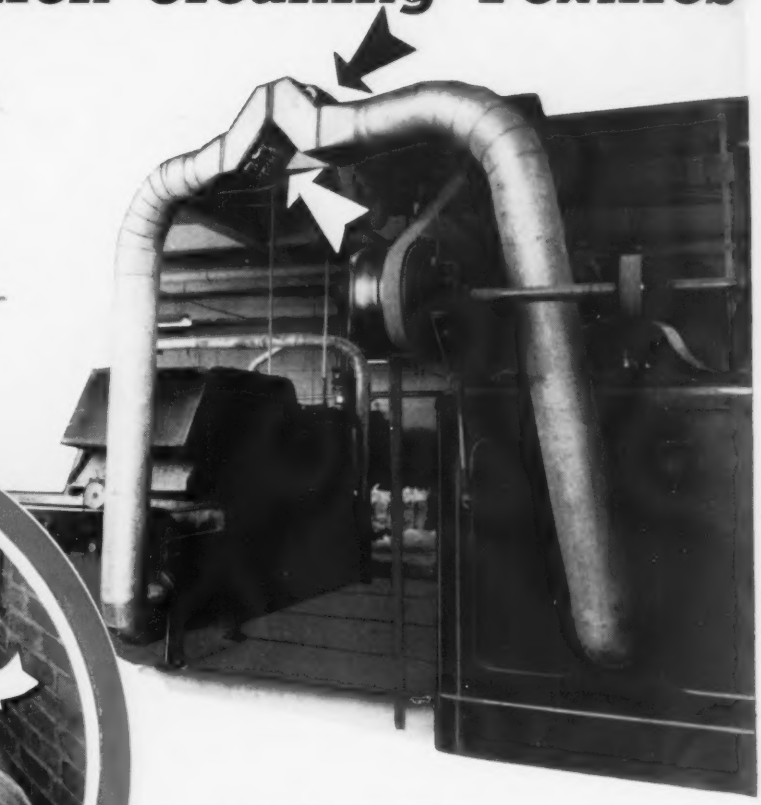

POSITIVE protection of expensive textile processing machines from tramp iron and steel plus elimination of the fire hazard from sparks (in cotton mills) are the two basic reasons why Eriez Non-Electric Permanent Magnetic Humps are first choice in modern textile mills. On pneumatic lines, Eriez Magnetic Humps placed between bale breakers and vertical openers and hooked up with oil treating equipment shown in this large southern cotton processing mill, are keeping costs down to a minimum. Your choice of Eriez Non-Electric Permanent Magnetic Protection is profitable because modest first cost is last cost . . . Eriez Magnets are engineered to fit your present lines and equipment or for installation on new machinery and lines about to be installed. They can be placed at any point in your processing line—on the ceiling—or near the floor. For complete details, clip the coupon.

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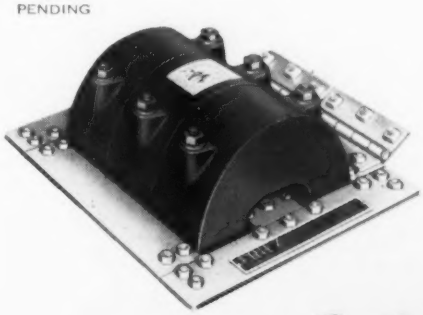

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KINKS & SHORT-CUTS
(*Continued from page 160*)

tubes in place. A diagram of a carrier with the corrective device is shown in the accompanying sketch.

The yarn now runs across the top of the metallic band and is thereby kept from coming into contact with the face of the carrier except at the "bridge" point. This arrangement has practically eliminated the surface tension on the yarn. As a result, our press-offs on 15-denier nylon have been reduced by two-thirds. It is very common now for complete sets of 30 stockings to be removed from the knitting machines without a single press-off. *(K-673)*

Burrs on Doffer Comb Removed by Sand in Box

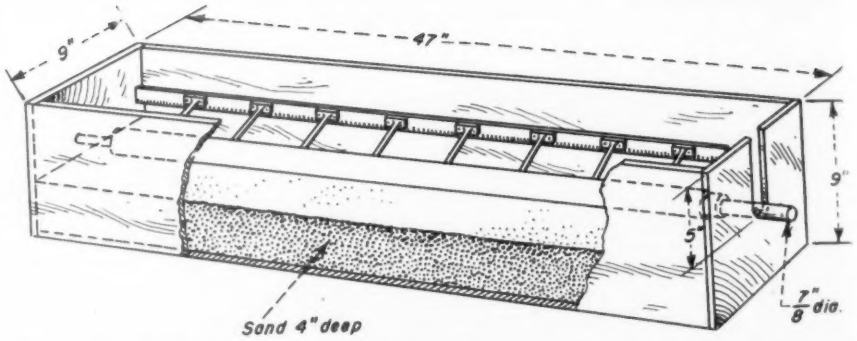
One of the jobs incidental to installing a new doffer comb on a cotton card is that of polishing the blade of the comb so that there are no rough places on the teeth. If a rough place is left on a tooth, cotton will hang on the tooth until a tag accumulates. Sooner or later the tag of cotton will become loosened from the tooth and be carried along with the web. If the rough place is very bad or if several teeth need polishing, the card tender may be troubled with the end coming down frequently.

Card grinders use various methods for polishing doffer combs, such as rubbing the rough teeth with fine emery cloth or a piece of soft pine board. The best method we have found is to use a sand box, shown in the accompanying sketch, for polishing the rough places off the comb.

The box is 47 in. long, 9 in. wide, and 9 in. deep. A $\frac{7}{8}$-in. hole is bored in the center of one end of the box, and a slot $\frac{7}{8}$ in. wide and 5 in. deep is cut in the other end. The bottom of the box is covered to a depth of 4 in. with fine, dry sand.

To polish a doffer-comb blade, put the short end of the comb shaft in the $\frac{7}{8}$-in. hole at one end of the box and lower the long end of the comb shaft into the slot in the other end of the box. Turn the comb backward by hand or by a hand crank. During each revolution of the comb, the back of the blade will dip into the sand in the bottom of the box. The sand will move across the blade and off the point of the teeth. Usually, about 20 or 30 revolutions of the comb are sufficient to remove the burrs from the teeth.

It is important that the comb be turned backward. If it is turned forward, grains of sand will lodge between the teeth and not only prevent adequate polishing but may also cause more burrs on the teeth. *(K-689)*
Ralph L. Taylor, Columbus, Ga.

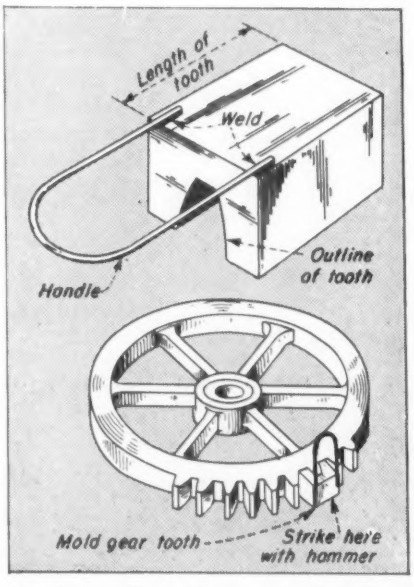


This sandbox is useful in polishing rough places off a cotton-card doffer comb. One end of the comb is placed in the hole at one end of the box, and the other end is placed in the slot at the other end of the box. The comb is turned backward 20 or 30 times. During each revolution, the back of the comb blade dips into the sand in the bottom of the box. As the blade passes through the sand, the burrs on the blade are polished off.

Gear-Tooth Mold Shapes Built-Up Tooth

Sometimes it is necessary to build up the teeth of a large gear with bronze, and trouble is often encountered in machining the deposit to the proper size and shape. In one plant, an operator eliminated this trouble by making and using a mold for shaping the teeth while the bronze deposit was hot.

The mold, shown in the accompanying sketch, was made the same length of a tooth of the gear. A piece of rod was bent in a *U* shape and welded to the back of the mold for a handle.



By placing this mold over a tooth built up with bronze and striking the back of the mold with a hammer, the built-up tooth can be shaped without the difficulty encountered in machining the deposit.

In using the mold, the operator built up the teeth to a little more than the desired height, reheated each tooth, placed the mold over the hot tooth, and struck the back of the mold a sharp blow with a hammer.

Occasionally, shaping teeth built up with bronze can also be accomplished by meshing the hot teeth with the teeth of the gear in which they will run. *(K-650)*
The Linde Air Products Co., New York, N. Y.

Cardboard and Carbon Paper Tests Roll Pressure

Finishing plants frequently have trouble in obtaining uniform pressure over the width of a set of squeeze rolls. Although equal weight or pneumatic pressure may be placed on each end of a set of rolls, the pressure across the rolls may not be uniform. Several things, such as friction in the linkage, may cause this lack of uniformity.

To guard against improper squeezing, it is necessary to gage the actual pressure on the rolls rather than the weights used. We have obtained excellent results by using cardboard and carbon paper to check the uniformity of the nip of our squeeze rolls.

The application in this case was on a two-roll dye padder, the rolls of which are 20 in. in diameter with a 50-in. face. The top roll was covered with hard rubber, and the bottom roll was of stainless steel. The nip-uniformity test was made as follows:

The padder operator set the loading pressure to the load desired, raised the top roll ,and placed two 8x5-in. pieces

Kinks and Short-Cuts
(*Continued on page 165*)

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GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

WHERE TO LOCATE THE SUPPLY (Roto-Coner*)

The two important factors in the proper location of the supply on the Roto-Coner* are direction and distance.

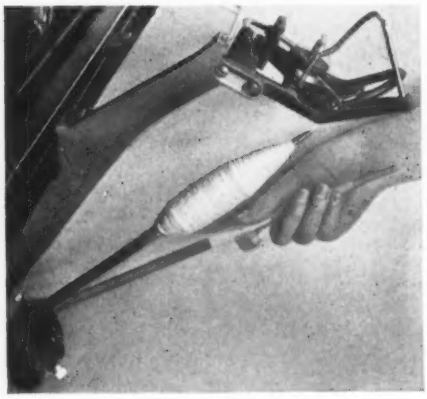

Fig. 1 Tilting Supply Spindle

The axis of the supply — whether bobbin, spool or wound package — should be in line with the delivery point on the tension bracket. With a package supply, it is not too important to be exact, but when fine yarn is being wound from bobbins or cops, this is one of the most important settings on the machine. If excessive end breakage develops on one spindle, the alignment of the supply should be one of the first things checked. All spindles should be examined periodically, which is easily done by sighting along the line of bobbins; if one is out of line, it can be detected at once.

The distance from supply to tension is nearly as important. Experimenting will show the best setting, since sometimes the supply should be as far away as possible, but generally it is set close. A close-set supply runs off smoothly as long as there is a single balloon of the yarn; but when the single balloon changes to double, there is sometimes trouble. A mule cop usually has to be so close to the tension that the full cop cannot be placed on the standard fixed supply spindle. In that case, the tilting supply is used: while the yarn is running, a spring holds the spindle in position close to the tension; while donning and doffing, the spindle is easily tilted forward so that the cop will clear. Once the proper setting is established, all spindles should be set uniformly.

DIFFERENTIAL TENSION AND PRESSURE ADJUSTMENT WITH CREEL SUPPLY (No. 50 Winding Machine)

The Creel Supply is used on the No. 50 when a number of ends are folded in winding a package to be used as a supply for covering wire or rubber.

With the Creel tension, there is no provision for releasing tension as the yarn speed increases in response to the increase in package diameter. With a "dead" yarn or where the increase in diameter is not great, this is not a serious problem, but in all other cases, the lack of tension release will cause the package to bulge badly.

The use of the Two Rod Differential Attachment corrects this condition.

The device consists primarily of three parallel rods. The center rod is fixed in two brackets. The bottom rod, which is free to turn in the same brackets, supports the brackets that hold the top rod. By means of a linkage from the Traverse Frame Counterweight to the bottom rod, the top rod moves outward as the package builds up.

Actually, this attachment serves as another tension, because the contact of the yarn with the rods creates tension. The yarn passes over and behind the top rod, in front of and under the middle rod, and thence to the breakage levers. As the upper rod moves outward, the amount of contact can be reduced from 216° to 23°. Thus a differential tension control is provided.

But tension is not the whole answer. Good winding is the result of a satisfactory combination of tension and pressure. The Two Rod Differential Attachment, while solving the tension problem, makes the standard differential pressure arrangement ineffectual due to the counter pressure effect of the rods.

In order to create differential pressure in keeping with the tension, the arrangement from the No. 6C machine was adapted for use on the No. 50. While the Two Rod Attachment causes the tension to vary inversely with the yarn speed, the 6C Pressure Attachment, working independently, releases the pressure differently. The release is rapid at first, but gradually slows down as the winding progresses. The result is a firm foundation for the package, and the release of pressure prevents the outer layers of yarn from pushing out the inner layers.

Applying the attachment to the machine involves only the drilling and tapping of one hole in the frame. The two attachments are applicable only to machines having fewer than six spindles.

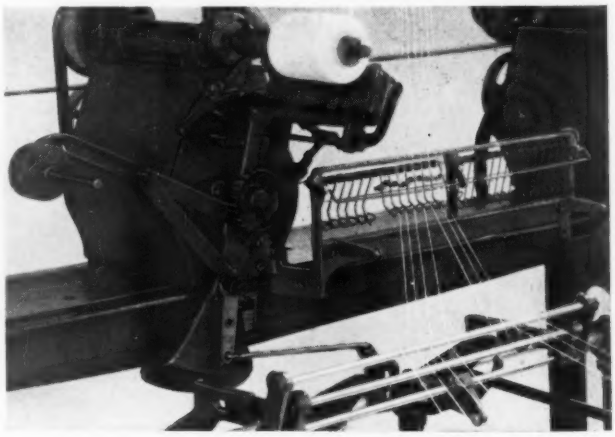

Fig. 2 Heavy Differential Pressure Attachment adapted from No. 6C for No. 50 Machine, and Two Rod Differential Tension Attachment.

*Reg. U. S. Pat. Off. July, 1947

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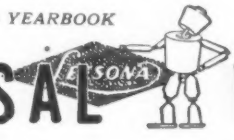

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PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

of thin, white cardboard on top of the bottom roll. These pieces of cardboard were placed about 2 in. in from each end of the roll, and 8x5-in. pieces of ordinary carbon paper were placed on the pieces of cardboard.

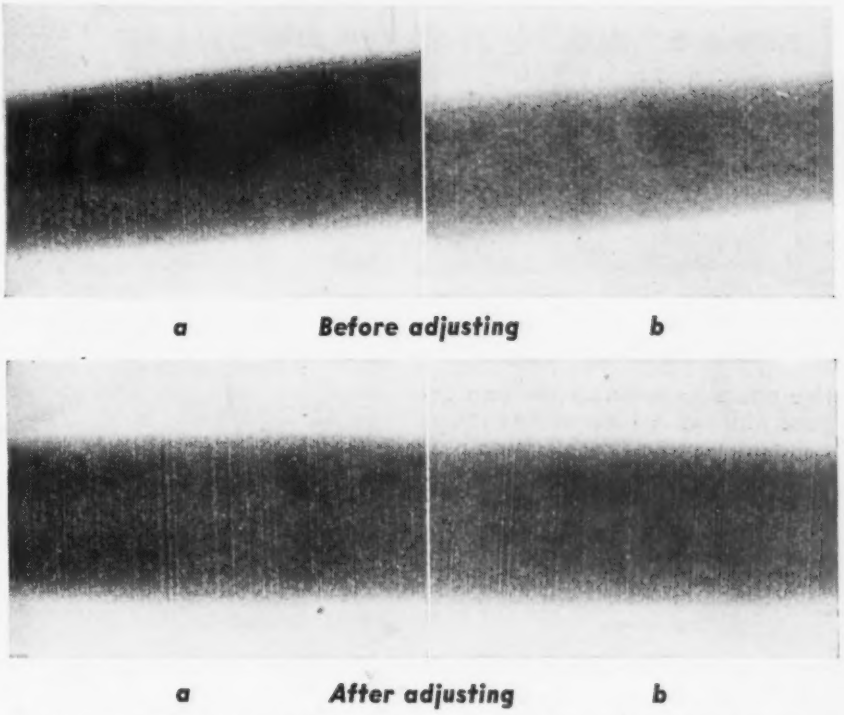
With the rolls still stopped, the operator lowered the top roll so that the cardboard and carbon paper were held in the nip of the squeeze rolls. He then applied his load pressure and waited until it had become equalized.

He then raised the top roll and removed the cardboard and carbon paper. From the carbon mark on the cardboard, the operator determined whether or not the loading was uniform across the rolls.

If the loading was uniform from end to end of the rolls, the carbon marks on the two pieces of cardboard would be of equal widths at the centers of the two cardboard pieces.

In the accompanying illustration, the two pieces of cardboard labeled "Before adjusting" indicate the appearance of the carbon marks when the loading is not uniform. In this test, *a* represents the pressure mark at the left-hand side of the squeeze rolls and *b* that at the right-hand side of the rolls. The width of *a* at the center of the piece of cardboard (which represents a point approximately 4½ in. from the ends of the rolls) is about 1½ in. The width of *b* at a corresponding point is only about 1¼ in.

The pieces of cardboard labeled "After adjusting" represent a pressure test made after the loading was corrected to yield a uniform nip across the rolls. The carbon marks at the centers of *a* and *b* are both approximately 1½ in. in width. *(K-680)*



By placing two 8x5-in. pieces of thin, white cardboard, with pieces of carbon paper on top of them, between the squeeze rolls of a dye padder, an accurate test of pressure uniformity can be made. In this illustration, "Before adjusting" represents a test made when the pressure was not uniform, although the pressure placed on each end of the rolls seemed the same. Carbon mark a is approximately 1½ in. wide of the center of the cardboard, while b is only 1¼ in. wide. "After adjusting" represents a test made after the nip had been equalized by placing more pressure on one end of the rolls than on the other. Carbon marks a and b are both 1½ in. wide at the centers of the cardboard pieces.

Traverse-Bar Extension Prevents Bunching of Yarn

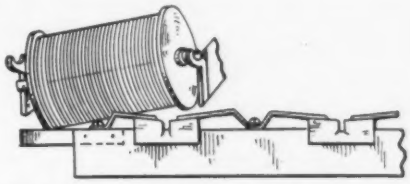
The traverse bars on some of the older models of up-spinners now in use in many throwing mills are somewhat short and, in many cases, prevent the winding of a good package.

Often the outside flange of the end bobbin on a rail will drop out of the finger that supports it and ride the traverse bar. When the traverse moves toward the end of its stroke to lay yarn against the opposite flange of the bobbin, the end of the bar slides from under the flange of the unsupported end of the bobbin. The bobbin drops until the wound yarn on the barrel of the bobbin comes to rest on the bar.

As the traverse reverses and makes its return stroke, the end of the bar jams against the dangling flange of the bobbin. In this manner, the traverse is kept from making its full return stroke. The yarn guides for every bobbin on that particular rail will be stopped, and each bobbin will have yarn "bunched" at that point.

Such a build, of course, increases waste yarn, broken ends, and loss of production. We have devised a guard for preventing faults from this cause.

A strip of cast iron or steel approximately $\frac{1}{16}$ in. thick, ¾ in wide, and long enough to extend well beyond the outside flange of the end bobbin on the rail is riveted or bolted to the traverse bar, as shown in the accompanying sketch. The strip should be fastened to the back of the bar, and the strip and rivets should be countersunk. *(K-682)* R. M. Greene, Camp Hill, Pa.



By riveting an extension to up-spinner traverse bar, the end bobbin on the rail will be held out of the way of the traverse bar during its stroke, in case the outside end of the bobbin drops out of its holding finger. This extension will aid in reducing the number of improperly built bobbins.

This Revolving Creel Useful on Some Winders

Production on many types of winders may be considerably increased by the use of a revolving creel, such as that shown in the sketch on page 166.

This revolving creel takes the place of the feeder-package spindle used on some winders. It consists of a revolving arm with a spindle at each end. The spindles are set at an angle so that they point directly toward the guides; regardless of the position of the spindles, the yarn will pull over the end of the package and run freely.

The method of operation is as follows: After the first bobbin is placed on the creel, threaded up through the guide, and started running, the creel is turned to place this bobbin at the back, away from the operator. A second bobbin is then placed on the creel, and the tail of the first bobbin is tied to the end of the second bobbin. When the yarn on the first bobbin is exhausted, the yarn will start winding

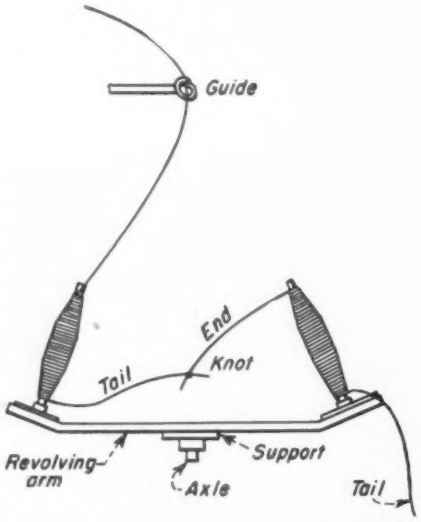
KINKS & SHORT-CUTS

(Continued from page 165)

from the second bobbin. The empty first bobbin is then removed, the creel again turned, and another bobbin tied on. This process is continued indefinitely.

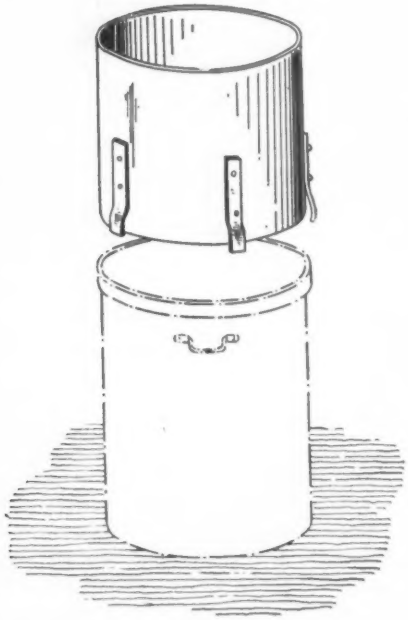
The revolving creel is best adapted for use with supply packages having tails, such as twister bobbins. If used with tailless bobbins, its only advantage would be in having the yarn in place with the end located and ready to be threaded up and tied when the running bobbin is exhausted. [The use of the creel would not be advisable either on yarn of such quality that the winder slub cleaner must be set close to aid in cleaning the yarn. With a close setting of the slub cleaner, the knot between the bobbins of yarn would probably cause a break in the yarn.]

Provided the operator is not assigned too heavy a workload, increased production will be obtained by using this creel, as it eliminates down time except for end breakage and doffing the full cones or tubes. (K-685)



A revolving creel constructed in this manner is useful on some types of winders on which yarn that does not need stripping by the slub cleaner is run. When the yarn on the first bobbin is exhausted, the tail of the first bobbin tied to the end of the second bobbin causes the yarn from the second bobbin to start running without a break in production. The empty bobbin can be replaced with a full bobbin at any time during the unwinding of the second bobbin.

Sheet-Metal Cylinder Adds Capacity to Barrel



Occasionally it is desirable to increase the capacity of a barrel, open drum, or other such bulk container. This job can be done, as shown here, by securing a piece of sheet metal and bending it in a cylindrical shape approximately the size of the open end of the container. Make three clamps to hold the sheet-metal cylinder in place on the container, and insert the end of the open cylinder into the container. Lower the cylinder until the clamps are engaged by the outside rim of the container. If braces are needed, the clamps can be lengthened so that they come farther down against the outside of the container. (K-687) Wm. H. Mullen, Quincy, Mass.

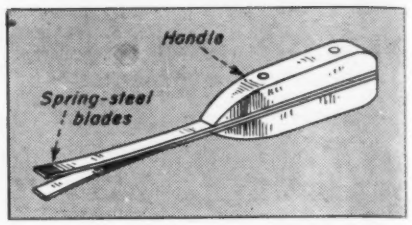
Spring-Steel Screwdriver Starts Screws Easily

Starting a nut or screw in a hole that is almost inaccessible can sometimes be a tedious job. In the case of a nut, it is often helpful to cut a slot across the head of the nut with a hacksaw and start the nut with a screwdriver. In many instances, the tool shown in the accompanying sketch may be helpful.

The tool consists merely of two pieces of spring steel arranged as the blade of a screwdriver. The tool can be made as follows:

Secure two pieces of spring steel about 10 in. long and ½ to 1 in. wide. Cut down the width of these two pieces over a length of about 6 in. so that the pieces are somewhat in the shape of a paddle. The cut-down sections should remain about ¼ in. in width. (If a larger or smaller screwdriver blade is needed, cut the width of the spring steel accordingly.)

Lay one of the blades on top of the other with the outward curves in opposite directions so that the ends of the blades will have a tendency to spring apart. Rivet or weld the 4-in. sections of the blades together to form a handle, and fasten a piece of wood or leather on either side of the handle to permit better gripping.



Two blades made of spring steel and fastened at the handle so that they spring apart at the ends of the blades are useful in starting screws in places that are difficult to reach with the fingers. Hold the blades together, insert the ends into the slot of a screw, and release the blades. They will hold the screw while it is turned to engage the threads.

When a screw must be started in a place that is difficult to reach with the fingers, hold the two spring-steel blades together, insert the ends of them into the slot in the screw, and release them. They will hold the screw while it is being turned to make the threads catch. (K-684) W. E. Warner, Essex, England

Loom Picker Shim Throws Shuttle Straight

When a loom picker wears or a picker rod is out of alignment from back to front, the picker frequently throws the shuttle crooked, often causing the shuttle to cut the filling at the box entrance as it passes out of the box. Of course, this trouble can be eliminated usually by replacing the picker; but parts can be continued in service by shimming the picker-rod stand.

Place the shim between the lay end and the picker-rod stand. The shim will cause the picker rod to bend slightly in toward the lay, if the shim is placed on the inner side, and throw the shuttle inward, thus insuring a straight course of the shuttle across the race. If the shim is placed on the outer side, the rod is bent outward. This position of the shim occasionally can be used if the shuttle point must be lined up in such a manner with the worn picker.

When a new picker or shuttle is installed on the loom, check the shuttle point with the picker so that the desired throw is obtained. Usually, shims can be removed at the time of replacing the picker. (K-655)

Here's the answer to your soaring sizing costs...

THE NEW HOUGHTO-SIZE CW

Gives you better sizing at lower slashing cost!

Mill men who used to worry about weave room efficiency have another worry these days to add to their sizing problems—that of the increasing costs of sizing warps.

Everything costs more—except Houghto-Size CW, Houghton's answer to both higher costs and quality sizing. This new size softener, developed to meet raw material shortages, has proved superior all the way through the mill.

It not only provides lower kettle cost; it protects warps so they weave better, and thus increases weave room efficiency—as much as 1½% in some mills, which in itself is vitally important. For folder and prices on Houghto-Size CW for immediate delivery, write—

E. F. HOUGHTON & CO.

303 W. Lehigh Ave., Phila. 33, Pa.
1301-05 W. Morehead St., Charlotte, N. C.

Unsized warps at left; Houghto-sized warps in right-hand group. Note how smooth and slick the sized warps look in this unretouched photo, made in Houghton Laboratories as a part of the Warp Size Check-up Test—a service rendered to mills on request.

Round Table

FOR EXCHANGE OF IDEAS—*The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

Method Sought for Disposing of Waste Size

The disposal of waste size is getting to be an acute problem in some of our plants. If it is discharged from the mill into an open ditch, this waste material emits an extremely offensive odor with consequent complaints from nearby residents.

If it is discharged into a sewer line, which in turn discharges into our private septic tank, the presence of the size retards or completely upsets the normal chemical and bacteriological action of the septic bed, with the result that the sand filters become completely clogged in a few weeks.

I imagine that this problem is not acute in most heavily industrialized centers, where a mill can discharge the waste size either into a sewer, a storm drain, or an industrial waste line and where the waste size is minute in proportion to the other waste matter in the sewer or drain line. However, it must be that many mills are faced with the same difficulty that we are experiencing; but I have yet to hear of a satisfactory solution of the problem.

Apparently, this waste size, consisting of starches and finishing oils, should be broken up chemically in a separate treating plant before it is discharged into a storm drain or sewer line. I would greatly appreciate information on any present successful method or proposed method of size disposal.

One suggestion that has been considered is that of burning the material in the form of spray in the mill boiler, but we have decided that this method would be impractical due to the material clogging up the pipe lines. The material could be successfully burned if it could be dried, but I know of no practical way of drying it because of the fact that the waste size is diluted with a lot of wash water in the average mill.

A possible solution would be to arrange the drain lines from the size boxes and the size-mixing kettles so that only concentrated size waste would be fed into a tank and diluted wash water containing only minute particles of the size would be discharged into storm drains. The concentrated waste size could be pumped into a tank or tank truck for transportation to a point where it could be dumped.

However, we feel that someone must have solved this problem chemically, and I would certainly appreciate any information along that line. *(R-346)*

Have you solved this problem of waste-size disposal? TEXTILE WORLD welcomes discussion of possible means, chemical or physical, for doing this job.—Ed.

Knee-Wire Clothing Is Easier to Clean

Straight clothing wire is not practical for the following reasons:

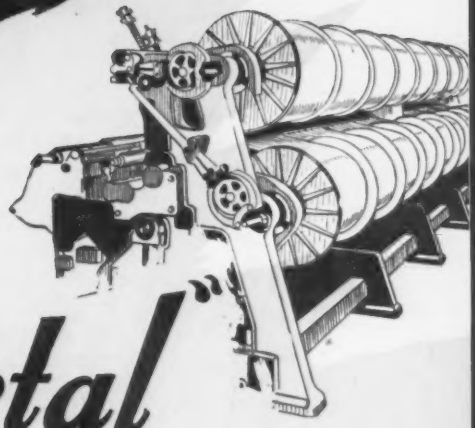
When straight wire has been in use for a time, it becomes depressed or flattened to a certain degree. This depressing is caused by the normal running of the card and also by the stripping roll. Some pressure must be exerted on the stripping roll in order to make the stripping wire sink to the bottom of the clothing wire to clean the cylinder and doffer.

Straight wire set at an angle offers no resistance to the cotton going so deep in the wire that it is impossible

(*Continued on page 170*)

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

Which metal is better for TRICOT *beams* ALUMINUM *or* MAGNESIUM?



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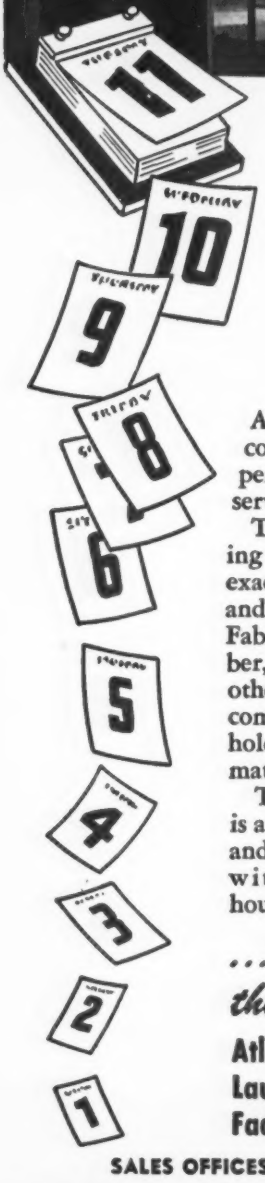
With Hayes "LITE-METAL" Beams the Customer "*pays his money and he takes his choice.*" Whether you prefer aluminum or magnesium Hayes is ready to serve your needs with beams to fit your individual requirements—all magnesium, all aluminum or aluminum heads with magnesium barrels.

HAYES INDUSTRIES, INC. Home Office: JACKSON, MICHIGAN, U. S. A.



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A few days exposure in the Weather-Ometer with controlled cycles of light, water spray, selected temperature and humidity, equals years of outdoor service.

The Atlas Weather-Ometer brings these weathering conditions right into your laboratory where exact tests of materials can be duplicated at any time and reliable results obtained. Fabrics, finishes, paints, rubber, plastics, and hundreds of other products can be accommodated in suitable holders adapted to each material.

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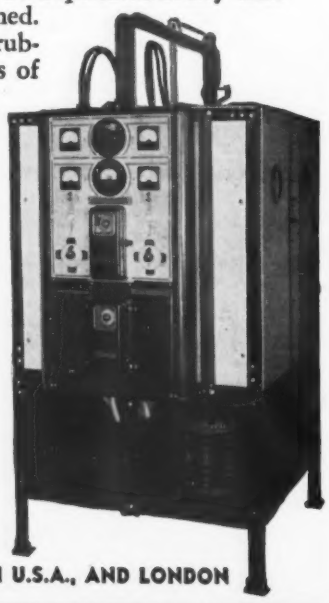

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SALES OFFICES IN PRINCIPLE CITIES IN U.S.A., AND LONDON

ATLAS ELECTRIC DEVICES CO.
361 West Superior Street, Chicago 10, Illinois

(*Continued from page 168*)

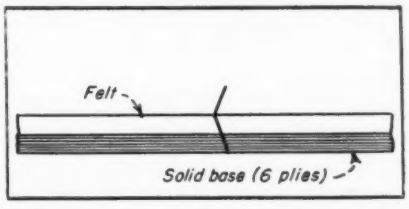
to get the cylinder as clean as it can be stripped if it is clothed with knee wire.

This condition tends to cause the clothing to wear out. Usually, the cotton has been oiled to keep down dust; and in many instances, it also contains chemicals. Unless the clothing can be well cleaned, these materials will form a sticky, dirty layer around the ends of the wires close to the cylinder. Such an accumulation, of course, makes the cylinder still harder to clean and also may cause the clothing base to rot. *(R-352)*

Knee in Clothing Wire Prevents Roughing-Up

Referring to the question by one of your readers, "Why Is Knee Wire Needed For Card Clothing?" (TEXTILE WORLD, May, page 178), we wish to say that from our experience the wire must have a knee or it will roughen up when it is put in use.

The equivalent of a straight wire can be obtained by the use of felt-face card clothing. This type of clothing, shown in the accompanying sketch, is used to some extent by woolen mills. *(R-347)*



Felt-face card clothing is made with the lower end of knee wire secured to a 6-ply fabric base. On top of this base is a felt covering that extends upward on the wire to the knee. The upper end of the wire presents a straight, slanted working surface. This type of wire is used in some woolen mills.

Pure Water Is Basis For Designating pH Values

I am frequently asked by mill men just what the pH of a cloth means. I am not a chemist, and my answers are always those of a layman; but, according to the reactions of the mill men with whom I have discussed this question, many mill men can readily understand a layman's answer when a chemist's answer would be over their heads. Hence, this simple explanation of the pH value of cloth.

Reduced to its simplest terms, the pH value of a cloth is the degree of acid or alkali contained by the cloth.

(*Continued on page 172*)

Smooth sailing . . .

It takes more than good weather and a fair wind . . . you need a skillful navigator to insure smooth sailing.

For the good sailor knows that it's the set of the sails with the changing winds that keeps him on his course.

When you're in charge of finishing operations you have to be prepared for changing conditions, too. Bleachers and dyers know that new de-sizing problems arise with practically every batch of goods. And they know that an all-purpose de-sizing agent like Diastafor brand—Type L gives them the easy, trouble-free operation that means "smooth sailing" on de-sizing jobs.

It's the fact that you can use Diastafor—Type L in an unusually wide range of temperatures and pH that gives it such flexibility.

Diastafor's wide range of use helps make your de-sizing easier—whether you are working with cottons, rayons, or mixed goods.

Even dyeing, a smooth flawless finish—these are the results that have made Diastafor so popular.

Diastafor's leadership in its field for 39 years is not just a matter of chance. It has been earned by its ability to give excellent results under widely varying conditions of use. Diastafor is as nearly fool-proof as we can make it.

Write us for further information about Diastafor. Our sales and technical staffs are always ready to help you on any specific problem. Simply address Standard Brands Incorporated, *Diastafor Department,* 595 Madison Avenue, New York 22, New York.

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Tennant Floor Machines are available in various sizes for 8", 12" and 16" drum accessories.

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1. RESTORES! Brings your dark, oil-soaked floor back to life by removing rough, grimy topwood fibers. Provides a dry, sound, vigorous surface.

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Without obligation please send Bulletins describing the Tennant System; also photos, comments from mills, performance data, etc. *What mills in our vicinity use the Tennant System?*

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☐ Cotton ☐ Woolen ☐ Silk-Rayon
☐ Knitting ☐ Finishing

The Tennant System
ENDS SCRUBBING
and can be used throughout your mill.

(Continued from page 170)

Leaving to the qualified chemist the actual duty of determining the pH of a piece of cloth, it is sufficient to state that a weighted sample of fabric is cut up and boiled in a solution; and the pH value is determined from this solution.

Pure water has a potential hydrogen-ion value of neutral, or pH 7. Thus, the starting point for acidic or alkaline conditions is pH 7. A pH value higher than 7 is alkaline; lower than 7 is acidic. The pH value moves up or down numerically and logarithmically, as: pH 8 indicates ten times as much alkali as pH 7; pH 9 indicates ten times as much alkali as pH 8, etc. Conversely, pH 6 indicates ten times as much acid as pH 7; pH 5 indicates ten times as much acid as pH 6, etc.

Basically, the logarithm of the number of liters of a solution that must be taken to obtain a concentration of 1 gram-ion of hydrogen (1.008 gm. of hydrogen) indicates the pH value of that solution. Ten million liters of pure water are required to produce a concentration of 1 gram-ion of hydrogen. The logarithm of 10,000,000 is 7. Thus, the pH value of pure water is 7. *(R-348)*

Weaving Defects Cause Heavy-Shade Filling Bars

In reference to the problem of uneven dyeing encountered by a reader in processing rayon ribbons ("Caustic-Soda Treatment Reduces Barré in Rayon," TEXTILE WORLD, March, page 180), I should like to point out that the dark filling bars could also be caused by defects in the weaving operation. A faulty warp let-off or insufficient beating up of the filling would cause bars in the dyed ribbons.

If there was a blotchy condition of the ribbon along with the heavy filling bars, the indication is that there was faulty processing in the dyeing or drying operations. Poor penetration of dye and migration of color will cause such blotchiness. Color migration, of course, is usually caused by improper extraction, by leaving the goods too long in the wet state before drying them, or by drying too slowly or at too low a temperature.

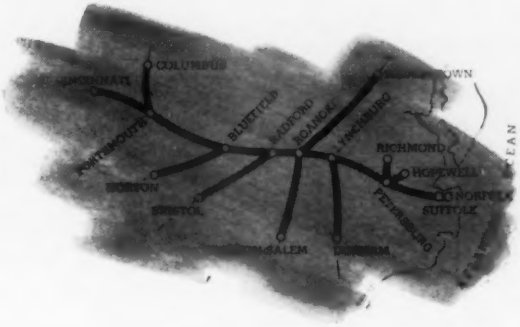
Blotchiness is also produced by too much loose or surface color on the material. This condition can be helped by using less color and more salt in the dye bath so that the dye is thoroughly exhausted on the fibers. *(R-351)*

IT'S ALWAYS FAIR WEATHER

And there's Always Room for Another Friend

Here, in the land served by the Norfolk and Western Railway, a mighty industrial empire is growing. This is a land for industry, answering industry's demands.

It is a land of abounding raw materials, with streams of pure water and power facilities for varied types of manufacturing. Here dwells industrious, intelligent native labor, skilled and unskilled, in pleasant communities, in scenic beauty and in healthful climate. Here is a land of forward-looking local and state governments. In the heart of this N. & W. territory is a supply of superior, all-purpose Bituminous Coal which will not be exhausted for thousands of years.



The artery that feeds life-blood into this territory, the Norfolk and Western, offers industry fast, sure *Precision* Transportation to and from the markets of the nation and — through the Port of Norfolk — to and from the markets of the world.

Here, good friends have "gotten together." Industrial might is teamed with the natural advantages of the land and with the service of the Norfolk and Western. "It's always fair weather when good friends get together" — and there's always room for another friend. If you're looking for an ideal location for your plant, *join us!*

For detailed, confidential information about any section of the Norfolk and Western territory, communicate with the N. & W. Agricultural and Industrial Department at Roanoke, Virginia.

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Even if your suppliers are thousands of miles away, and you need parts and supplies *right now* — let others do the worrying, but never you. Specify Air Express and get delivery in a matter of *hours.*

Air Express goes coast-to-coast overnight, and speeds up to five miles a minute insure same-day delivery between many U.S. towns and cities. Use it regularly, and you'll be paid off in greater customer satisfaction and smooth-running, efficient operation. To solve overseas shipping problems, investigate fast, frequent, inexpensive International Air Express.

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GETS THERE FIRST

Fastest delivery — at low rates

65 lbs. of machine parts in Louisville had to get to Dallas *fast.* Picked up at 5 PM on the 25th, they were delivered at 7 AM on the 26th. For complete door-to-door service, the Air Express charge was only $15.96!

Questions AND Answers

Stripping of Nylon Size May Be Due to Humidity

Technical Editor:

The inclosed sample of 20-den. nylon yarn is from a lot of yarn that is giving us considerable trouble on our full-fashioned knitting machines. We are finding it difficult to knit quality ladies' hose because of excessive sizing stripping off the yarn. Can you advise us whether the trouble lies in the yarn itself, in faulty processing by the throwster who prepared the yarn, or in conditions in our own plant? (9179)

There is no dependable way to tell exactly where the trouble explained here lies. The easiest and most accurate method of discovering the cause of size stripping off the yarn would be experimentation. Factors in your own plant that might influence size stripping are humidity, temperature, trough solution, and mechanical adjustments of machine parts.

A relative humidity of 50 to 55% at 78 to 80° F. gives a knitting-room atmospheric condition that has proved very satisfactory for producing nylon hosiery. High humidity (as 65%) definitely causes sizing to strip off the yarn, resulting not only in damaged fabric but also dirty, untidy machines. If automatic welt-turning is being used, high humidity and the resulting size stripping will cause hook-up and welt-turner troubles.

However, humidity alone does not give the complete picture. Temperature and trough solution must be considered as factors inseparably related to humidity. Since water is such a major constituent of any trough solution, it is well worth while to have the water you use analyzed to determine exactly what it contains. Many trough solutions now on the market yield different results when used with water in different localities. Generally, soft water—as nearly pure as can be obtained—gives the best results. In many localities, it is advisable and economical to install means for softening process water.

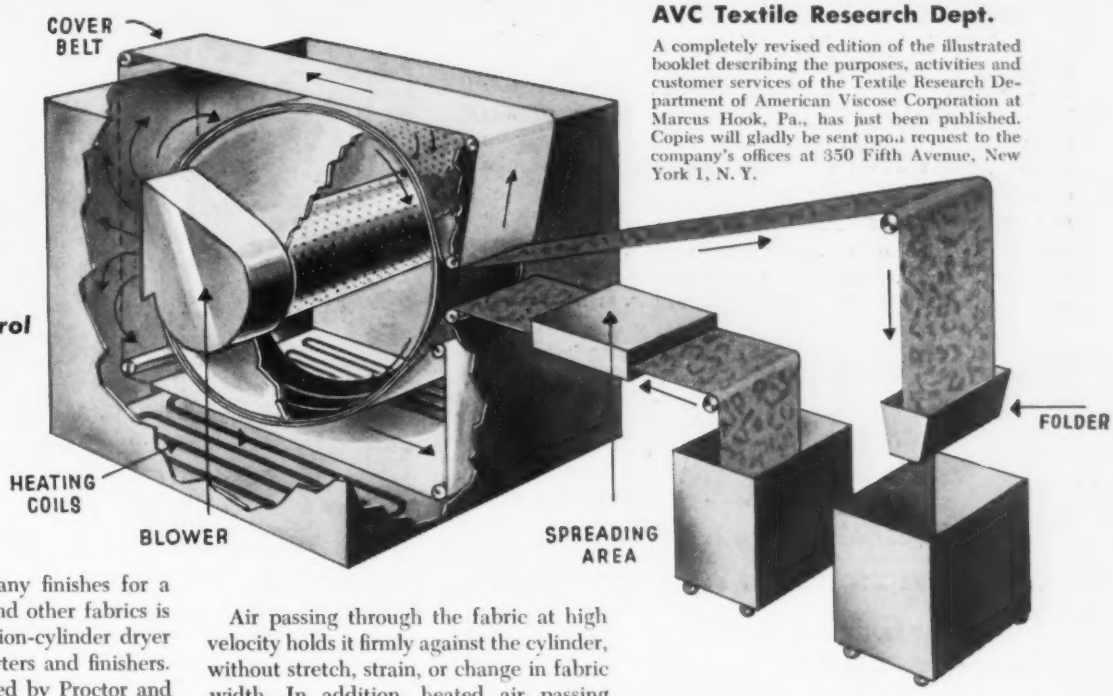
(*Continued on page 176*)

Rayon Reports

Published Monthly by American Viscose Corporation, New York, N. Y. [illegible]

New Suction-Type Cylinder Dryer

Saves Time, Handles Variety of Fabrics, with Precision Control



Quality control over many finishes for a wide variety of rayon and other fabrics is achieved by a new suction-cylinder dryer now available to converters and finishers. The dryer was developed by Proctor and Schwartz, Inc., and jointly the Textile Research Department of the American Viscose Corporation.

The fabric is entered into the machine through a spreading device and is then fed onto a scrim-covered, perforated, revolving cylinder. A continuous cover-belt of very open mesh holds the fabric in position on the cylinder.

Blowers force air, heated to desired conditions, through the cover belt, fabric and cylinder. Disks on the cylinder shaft are adjustable to fabric width to confine air flow solely to the area covered by the fabric.

Air passing through the fabric at high velocity holds it firmly against the cylinder, without stretch, strain, or change in fabric width. In addition, heated air passing through the fabric has proved a much more efficient drying means than conventional air "impingement," in some cases reducing drying time from thirty minutes to five.

The entire mechanism can be instantly stopped and reversed if defects are discovered in goods about to enter the dryer, thus preventing the defects from passing through the machine and becoming permanently set in the finish.

The dryer has been thoroughly proved in practical service on tricot fabrics, circular knit fabrics, open-width woven fabrics, on resin finishing, rayon and silk prints and others. One man can operate it.

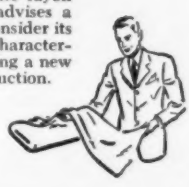
Revised Booklet Tells Story of AVC Textile Research Dept.

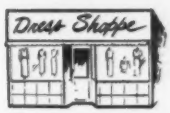
A completely revised edition of the illustrated booklet describing the purposes, activities and customer services of the Textile Research Department of American Viscose Corporation at Marcus Hook, Pa., has just been published. Copies will gladly be sent upon request to the company's offices at 350 Fifth Avenue, New York 1, N. Y.

RAYON 20 YEARS AGO

More rayon has been blended with wool for women's apparel this fall than in any previous year.

Don't just *substitute* rayon for other fibers, advises a trade authority. Consider its own distinctive characteristics when planning a new rayon cloth construction.





Practically all leading dress goods manufacturers are now using rayon in some manner—and their products are displayed by nearly every dress shop in the country!

MAKE USE OF *Avisco* 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

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Want Money to Finance Machinery and Equipment Purchases?

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YOUR TOTAL COST PER $1,000 FINANCED:
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Under its Machinery and Equipment Purchase Plan, Commercial Credit is ready to finance all your purchases of new or used machinery and equipment . . . even equipment engineered and built to meet your special requirements . . . at the uniformly low cost shown above. Under this plan, you make a nominal down payment and we supply the balance. You repay us monthly, with the help of increased earnings and economies effected by the equipment.

FOR IMMEDIATE ACTION . . . just fill out the form below. We'll send a detailed plan to fit your specific needs. This plan will be submitted with the complete understanding that you are not obligated in any way. Fill out the form **now**, mail it **today**.

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Gentlemen:

We are considering the purchase of Machinery and Equipment as follows:

This will cost approximately $.....
which we are interested in financing over a period of.....
months. Without obligation on our part, please submit a detailed plan to cover this financing.

Name ..... Title .....

Company .....

Address .....

(*Continued from page 174*)

The technical department of the throwing plant with which you do business can probably be of valuable assistance in determining whether or not your present trough solution is compatible with the oils and sizing they apply during the throwing preparation. Once you have obtained a suitable trough solution, it would be wise to continue it as long as you are using it successfully and economically. Otherwise, the period of experimentation will very likely have to be undergone again.

Water boxes on the knitting machines should be cleaned periodically (about every 6 mo.), and the felts used to strip excess water off the yarn should be changed about every 3 mo. A small amount of special lightweight oil (about ½ pt. to 50 gal. water), soluble in water, should be used as a rust preventive in the trough solution. This oil will also aid in prolonging the life of the carrier tubes.

Needles, sinkers, and dividers should be given close attention. Cleaning solutions that will keep size loosened on these parts are available. At the beginning of each shift, each knitter should be required to brush a small amount of one of these solutions (usually mixed with water) on the sinkers during the knitting of the welt. The solution will loosen size accumulated on the working parts and prevent it caking and causing menders, broken needles, etc. These cleaning solutions are not lubricants, and the sinker heads should still be oiled occasionally with a good grade of needle oil.

Expensive Lard Scouring Oil Used by Worsted Mills

Technical Editor:

What oil is used principally by wool-scouring plants? I am particularly interested in the advantages and disadvantages in using lard-base and petroleum-base oils. (9182)

The oil approved by the National Assn. of Wool Manufacturers for worsted top is the fifty-fifty mix of solvent, refined mineral oil (viscosity 200) and extra-winter-strained lard oil.

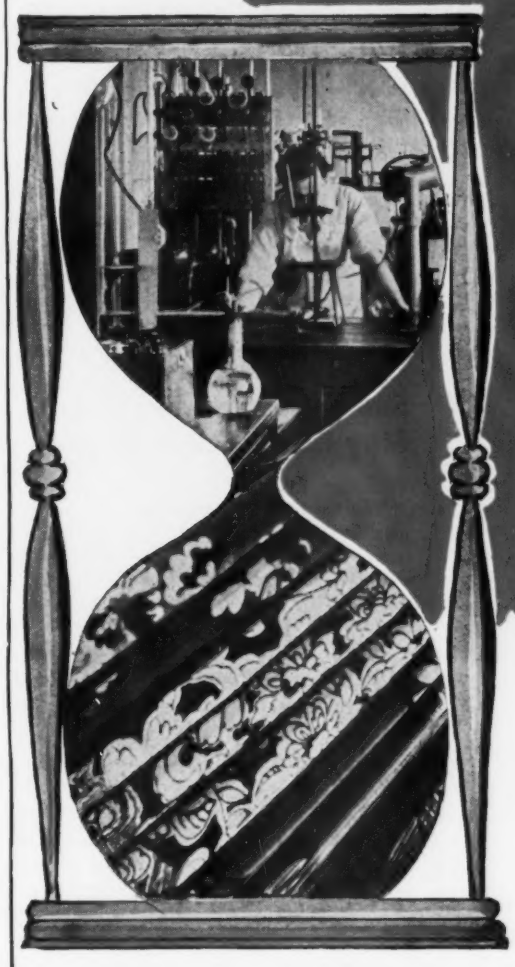
Due to the high price of lard oil at present, this wool lubricant is probably confined in use largely to worsted top. Other satisfactory mixtures of mineral-oil with emulsifiers other than glycerides such as lard oil are being used by mills that process their own wool stock.

The mineral oil-glycerine (lard oil, peanut oil, etc.) mixtures give better scourability than the mineral oil-

(*Continued on page 178*)

25 YEARS

OF CHEMICAL PRODUCTION TECHNICAL AND RESEARCH SERVICE TO THE TEXTILE INDUSTRY



1922 — 1947

● Since 1922, Standard Chemical Products, Inc., has concentrated on supplying the Textile Industry with a complete line of processing and finishing agents, formulated to meet the needs of the latest advances of textile chemistry. Each product is manufactured under strict laboratory supervision . . . carefully balanced to meet the most exacting requirements of operation and fiber.

Why not submit your problems or special needs to us, without obligation? Technical field representatives are conveniently located in leading textile centers to render mill service at all times.

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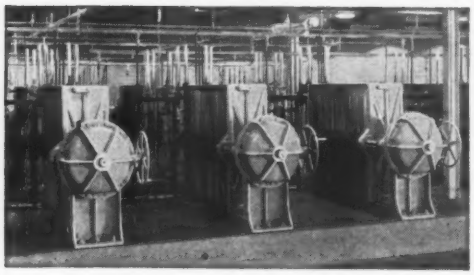
WEBCELL CONTINUOUS DIALYSER

May Be Your Answer to



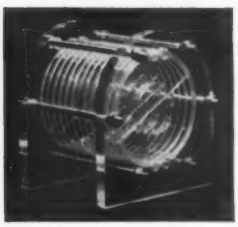
One of several large batteries of Dialysers now being used in viscose rayon plants for the recovery of caustic soda.

PROFIT *from* WASTE

Dialysis is now being used profitably in many fields for the:

- **RECOVERY OF ALKALIS**
- **REMOVAL OF ACIDS AND OTHER NON-WANTED MATERIALS**
- **PURIFICATION OF SOLUTIONS**
- **MANUFACTURE OF BY-PRODUCTS**

You may be throwing away material that can be turned to your profit through recovery or reuse as a salable by-product or you may wish to remove or purify your product.



(Laboratory Model)
Made of Lucite

The Laboratory Model Webcell Continuous Dialyser is currently being employed in the Research Laboratories of several chemical, food product, biological and pharmaceutical companies in this country and abroad. For those desiring to carry on experimental work in dialysis the Laboratory unit offers the opportunity to study the problem closely.

We suggest that you give consideration to this process as a means of greater efficiency and economy in your plant. Our experience with production equipment has given us valuable information which may be of interest to you toward the solution of your problems.

BROSITES MACHINE COMPANY INC.
50 CHURCH STREET (Cable Address—BROMACH) NEW YORK 7, N. Y.
Telephone—COrtlandt 7-1188

(Continued from page 176)

emulsifier combination, but there are several of the latter on the market that produce satisfactory performance and are used by many worsted and woolen mills. There is a great difference between the prices of these two types of mixtures, and this factor has an important bearing upon the mill's selection.

Leno Weave Produces Strong, Firm Fabric

Technical Editor:

Can you advise me as to what type of machine was used to manufacture the cloth sample enclosed? (9183)

This type of fabric is woven on a loom equipped with a leno motion. In leno weaving, adjacent warp ends are caused to cross each other between each filling pick. This weave produces a strong, firm fabric. A special steel leno heddle is now available and has largely replaced the old-style twine loop.

Shades in Worsted Goods May Result From Alkali

Technical Editor:

We are having trouble with piece-dyed, hard-finished worsted fabrics being shaded from side to center, with the sides darker than the center. This condition occurs mostly with blue colors. We are using chrome colors in one bath. (9184)

It is difficult to answer this question without definite information as to the method and materials used in preparing the cloth for dyeing. If the cloth is crabbed after scouring, the shaded goods will result if the alkaline materials of the scouring process are not completely removed. If soap is used in scouring, use a small amount of a good synthetic detergent after the final rinse for additional scouring. Then rinse and treat the goods with a weak bath of acetic acid. This treatment will eliminate all effects from alkali left in the cloth.

Disposal of Waste Size Is Aided by Live Steam

Technical Editor:

We are having difficulty in disposing ot waste size. Can you suggest a means for getting the size from the dumping drain to the sewer located some distance from the drain. (9185)

One effective means for moving the waste size from the dumping drain to the sewer is to install a steam outlet and use steam to carry the size to the sewer. One mill that uses this method

(Continued on page 184)

The Mercer Memorial at Great Harwood

Once again Boger & Crawford pays tribute to

JOHN MERCER

on the occasion of the Ninety-Seventh Anniversary of the invention of the Process of Mercerizing Cotton Yarns

BOGER & CRAWFORD

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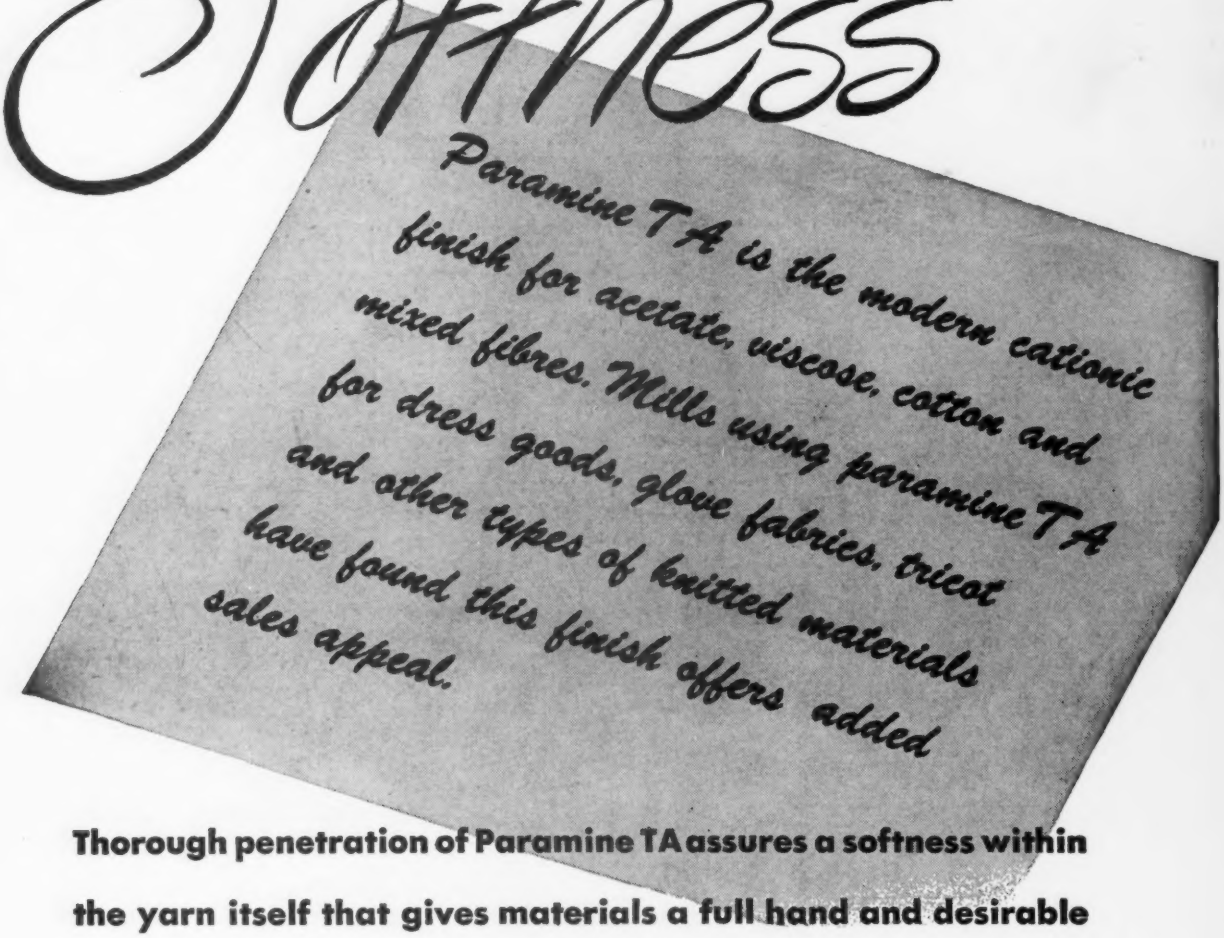
Paramine TA is the modern cationic finish for acetate, viscose, cotton and mixed fibres. Mills using paramine TA for dress goods, glove fabrics, tricot and other types of knitted materials have found this finish offers added sales appeal.

Thorough penetration of Paramine TA assures a softness within the yarn itself that gives materials a full hand and desirable drape—its substantive action produces a durable, lasting finish —Application is simple.

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NEWARK, NEW JERSEY

MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.*

Free FOR THE ASKING

1. Lightweight hydraulic hand pallet trucks are described in 2-page bulletin No. 221 published by Lyon-Raymond Corp. The folder describes the features of the lightweight truck, presents specifications, and illustrates how streamlined design resulted from use of light metals and new construction techniques.

2. Pressure controllers of the external-pilot-operated type, their engineering, operation, and maintenance are described in Bulletin No. 462 published by Leslie Co. Large cross-sectional drawings show the design features of the control pilots and diaphragm-regulating valves for a wide selection of operating media; charts and capacity tables are provided to guide the selection of equipment for specific applications. Instructions are given for installation, operation, and maintenance.

3. Fuseless circuit breakers for branch-circuit protection are described in a 4-page folder published by Cutler-Hammer, Inc. The folder describes the MO-4 multi-breaker, combining four breaker poles which can be used as four single-pole circuits or can be converted to one or two double-pole, 3-wire solid neutral circuits.

4. "Is Your Roof a Fair-Weather Friend" is the title of a folder published by Stonhard Co. describing how to stop leaks, renew dried-out roof surfaces, repair flashings and gutters.

5. Used machinery, reconditioned and guaranteed, for a wide variety of applications in many fields of industry, is described in *Consolidated News*, published by Consolidated Products Co. The pictorial edition illustrates the company's facilities, shows its methods of handling machinery and equipment, and a supplement lists the various types of machinery which are available.

6. "Superpressure Catalytic Hydrogenation Apparatus" is the title of an 88-page catalog, No. 406, published by American Instrument Co. Included is a discussion of high-pressure processes, a presentation of typical high-pressure flow sheets, and a detailed description of apparatus used in high-pressure and high-temperature technique.

7. High-manganese, high-sulphur steel plate developed especially for applications involving machining is described in an 8-page illustrated bulletin published by Joseph T. Ryerson & Son, Inc. The literature gives analysis, physical properties, and explains the machining advantages.

8. Six dyestuffs are described in new circulars issued by General Dyestuff Corp. Algosol Olive Green IB-CF, Fast Blue Salt BN, Diamine Brown 3 GN Conc. CF, Supranol Brilliant Red BA-CF, Indanthrene Brilliant Orange RKA Paste for printing, and Cellitin Fast Black BTNA are described, methods of application are given, and samples of fabric are included to show the effects obtainable.

9. "Twin-Knitter," a two-section, full-fashioned, women's hosiery machine is described in a leaflet issued by Robert Reiner, Inc. The machine is pictured and its various features are described.

10. Electronic controls are the subject of a 20-page three-color book published by Wheelco Instruments Co. Measuring and control systems; electronic control principle; and multronic, proportioning, automatic positioning and program control are explained with graphs, diagrams, and photographs.

11. Products list of industrial chemicals has been published by Hooker Electrochemical Co. The new bulletin comprises 20 pages of description, principal physical and chemical properties, graphic formulas, uses, and shipping information on the chemical products of the company.

12. "Take Care of Your Traverses" is the title of one of the items in No. 62 of *Getting the Most from Winding*, published by Universal Winding Co. Other items in the folder describe an automatic tension opener for the No. 99 winder, method of winding continuous packages on No. 50 winders, a cone truck for transporting cones from one department to another, and information on worn cams and cam rolls on No. 90 winders.

13. Regulating cloth expanders of the 3-bar and 5-bar types are described and illustrated in an 8-page folder published by Thomas Leyland Machinery Co., Inc. The folder describes expanders built for specific purposes and also describes and illustrates free-running scutchers.

14. Texrope V-belt drives are catalogued in a 144-page book published by Allis-Chalmers Mfg. Co. The indexed catalog is designed exclusively to pre-engineered

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stock Texrope drives for all applications from one to 150 hp.

15. Rust preventives for protection of metal surfaces are described in a 3-page folder published by Gulf Refining Co. The folder describes five types of oil film and six types of petrolatum rust preventives, discusses selection of the proper rust preventive for each specific need, and outlines method for preparing the surface before application.

16. Heat exchangers of Karbate impervious graphite for use under highly corrosive conditions are described in a new bulletin, Catalog Section M8808, published by National Carbon Co., Inc. The bulletin describes heat exchangers in three sizes, 8.2 sq. ft., 16.4 sq. ft., and 24.6 sq. ft. effective outside tube areas.

17. Aftercoolers for removing moisture from compressed air and gas are described in Bulletin L-802-B2, published by Worthington Pump & Machinery Corp. The folder tells why aftercoolers are important in pressure systems, it includes a chart showing the weight of moisture per 1,000 cu. ft. of saturated air at various pressures and temperatures, and it describes and illustrates several types of aftercoolers and moisture separators.

18. Parts for the No. 1 blending feeder made by Troy Whitehead Machinery Co., Inc., are illustrated and described in a catalog just issued by this company. Many of the views are in effect "exploded" views showing the relationship of the parts so that ready identification is simple. The parts are also indexed and the weight of each in pounds is given.

19. Wear-testing aids manufactured by the Taber Instrument Corp. are described and illustrated in a 12-page brochure. The accessories for the standard abraser include a vacuum pick-up attachment, an interval timer, an abraser dry-mount, and a duplex refacing stone.

20. Dyeing, warping, and finishing machines, particularly for knit goods but adaptable to woven materials, are illustrated in a booklet issued by the English firm of Samuel Begg & Son. The machines are illustrated, and so far as the dyeing machines are concerned, tables of data regarding internal dimensions, liquor capacity, and floor space occupied are given for the various size models. In another circular is described the firm's heavy type calender, 3-bed press, light calender, hosiery boarding machine, etc.

21. Application methods and dyeing and printing formulas for the use of "Fast Scarlet Salt G" are contained in a circular issued by General Dyestuff Corp. The dye is soluble in water and couples directly with naphtholates to form insoluble naphthol colors. The properties of the dye are given in tabular form, and samples of 13 dyeings and one printing are given on the last page of the circular.

22. The importance of pH control in wool processing is the subject of a monograph published as the Calco Technical Bulletin No. 778, by the Calco Chemical Div. of American Cyanamid Co. The authors are Shannon Mooradian and Henry E. Millson. Considerable data on fiber damage and shade changes are given, and three useful tables especially prepared for dyehouse use for pH readings in the dye bath under various conditions are included.

23. Applications of synthetic detergents in wool processing are described in a 4-page article in the May, 1947, issue of the *Rohm & Haas Reporter*. The article indicates the use of the firm's Tritons in grease-wool scouring. The article also describes details of carbonizing, utilization of spinning oils, and application of the Tritons in piece-goods scouring.

24. Seven distinct shades of enamels, especially compounded for use on textile-mill bobbins, appear on a color card issued by the Spencer-Adams Paint Co. The colors are brilliant and distinctive; the same enamel comes also in black and white.

25. "Surface Treatment with the Armeens and Armacs" is the title of a 4-page technical bulletin issued by Armour & Co. describing the use of the aliphatic amines and their applications in changing the surface characteristics of textiles and various other materials. The treatment prepares surfaces for application of paints, coatings, dyes, etc.; and often produces an opposite static electrical charge from that originally on the surface.

26. A line of knitting mill devices made of Plexiglas is described in a folder issued by Plasti-Line, Inc. Among these devices are the following: looper guard, seamer's tray, looper's clip container, mender's magnifier, inspection table, and inspection board.

27. The application of Air-o-Line controllers in the operation of temperature, pressure, flow, and liquid-level control instruments, is described and illustrated in an article in the April-May, 1947, issue of *Instrumentation*, published by Brown Instrument Co. The non-bleed pilot relay, which is a booster relay making possible the line of pneumatic controllers, is illustrated schematically and described in detail. This relay is an important component of all the pneumatic controllers, and it is illustrated in connection with a representative group of instruments.

28. Light-metal beams for numerous textile applications are covered in a 14-page catalog issued by Milton Machine Works. Standard tricot beams are featured, and specifications are given for a group of special size and purpose beams.

29. Flock cut to a precision length and supplied in 24 colors is the subject of a booklet issued by Behr-Manning Corp. The booklet gives samples showing the range of colors in bright-rayon flock of ⅛ mm. coated on paper. The booklet describes how the flock is made, how it can best be used, preparation of adhesives, and typical uses for products.

TO GET MORE INFORMATION

1. Fill out completely *one space* (name, title, company, address, and item number) for *each* bulletin wanted. Put only one number in each square.

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(*Continued from page 178*)

dumps the size into the drain and closes a valve on the drain side of the steam outlet. The steam valve is then opened, and the size is blown into the sewer, where it mixes with other waste and is carried along in the sewer.

Life of Loom Parts Depends on Many Factors

Technical Editor:

What is the useful life, expressed in loom hours of pickers, picker sticks, lug straps, lug sticks, shuttles, and temple rolls? (9180)

The useful life of these parts is governed by so many conditions that it is almost impossible to say how long they should last. The type of loom, quality of the supplies, speed and size of loom, and size of the shuttle must be considered.

A reasonable life expectancy of the parts under average conditions would be:

Pickers	2 to 4 (mo.)
Picker sticks .	6 to 8
Lug straps ...	8 to 12
Lug sticks ...	12 to 18
Shuttles	6 to 8
Temple rolls .	6 to 8

Screen-Printing Plants Use Few Festoon Machines

Technical Editor:

Are screen-printing plants using festoon air-drying machines to any extent at present? (9181)

Festoon dryers are not widely used for drying screen-printed fabrics, but such an installation should not present a difficult engineering job.

Many printers hang the fabrics by one selvage by means of a cord and pulley arrangement. The fabrics are removed when they are dry enough to be handled, usually once or twice daily. Other printers dry fabrics on a series of bars placed horizontally at intervals of 10 to 12 ft. The cloth is removed by being lifted straight up as soon as it is dry enough to be handled. Both of these drying methods are simple and inexpensive and meet the usual requirements.

One old-time roller-printing plant used a festoon drier, but this plant is now out of operation and no information is available.

At least one dyeing and finishing plant is currently using such a dryer for heavy cotton duck. The duck is dyed, waterproofed by padding through aluminum acetate, can dried, padded through a solution of paraffin, and air-dried on a festoon machine.

Better Rayon with These Hooker Chemicals

Chemists who have worked to improve rayon production have learned that they can depend upon the high quality of Hooker Caustic Soda. Because of its continued dependability, Hooker Caustic Soda has retained its popularity in the Rayon Industry over the years.

These same high standards are upheld in all Hooker Chemicals. The ever increasing use of Hooker Rayon Chemicals testifies to the confidence users have learned they can place in Hooker products.

Here are five of the Hooker Chemicals that are helping in the manufacture of viscose rayon. The consistent high purity of these Hooker Chemicals lightens your work and enables you to turn out uniformly high quality products.

PRODUCT	*DESCRIPTION*	*USE*
Caustic Soda	Specially refined for Rayon Industry. Impurities carefully controlled. In solutions of 50% and 73% concentration.	Mercerizing pulp to form alkali cellulose having *reproduceable solution viscosity.*
Liquid Chlorine	Light orange liquid or greenish yellow gas of uniform high quality.	Treating process water. Preparation of hypochlorite bleaching solutions.
Lauryl Pyridinium Chloride	A mottled tan semi-solid. Solubility in water is 60 gms per 100 gms of water.	As a cationic detergent to keep spinerettes* clean. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Sodium Sulfide	A light yellow colored solid relatively free from iron and other heavy metal salts.	In desulfurizing rayon yarn. Manufacture of dyes.
Sodium Sulfhydrate	A light yellow colored solid of high purity and negligible metal content.	For preparation of desulfurizing bath. Manufacture of dyes.

Data sheets and samples of Hooker Chemicals will be sent when requested on your letterhead. A new 20 page edition of our General Products List has just been published. If you do not have a copy, we suggest you write us for one today. It contains information on Hooker Chemicals and processes many of which have a wide application in the textile field.

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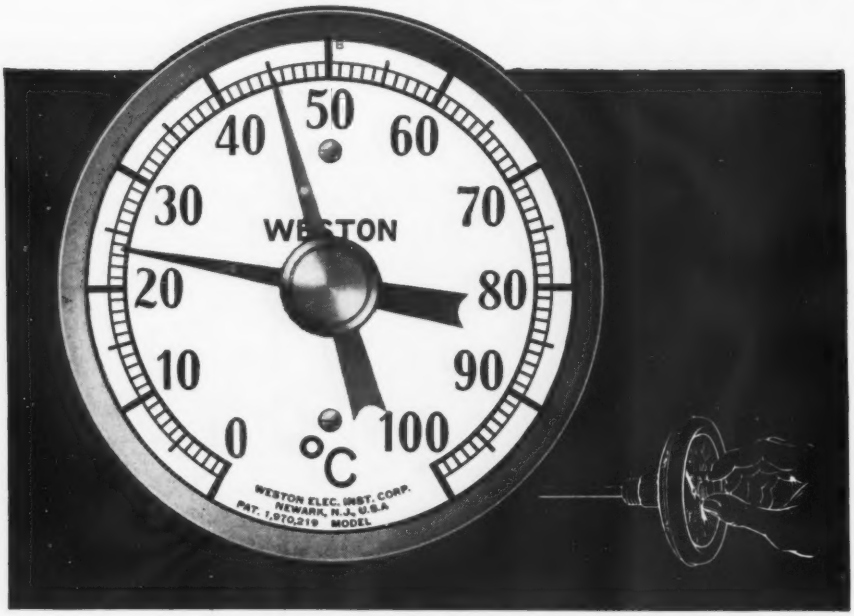

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For complete details see your jobber or local Weston representative. Weston Electrical Instrument Corporation, 690 Frelinghuysen Avenue, Newark 5, New Jersey.

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WESTON *Instruments*

Conveyor Steamer

(*Continued from page 104*)

ORIGINAL TYPE STEAMER. This early steamer was designed primarily for the continuous preparation of cotton goods in the open width. It handled any weight of fabric and operated without interruption; one length of fabric simply was sewed onto the end of the preceding piece.

Caustic steaming in this equipment could be followed by running the goods again through a bleach solution and re-steaming, or by any of the conventional bleaching methods. In many cases, goods that were to be subsequently dyed in dark shades could be prepared by a single caustic steaming in this equipment, without an additional bleaching treatment.

This steamer did a highly satisfactory job and answered a long-felt need, especially in the processing of heavyweight cotton goods which could not be handled in rope form.

Since this equipment promised to provide a quick and flexible method for preparing such goods, a Mathieson steamer was installed at Union Bleachery in 1941. This unit consisted of a steam-tight chest 65 ft. long and 5 ft. wide and would accommodate both wide and narrow fabrics. Within the steamer was a rope conveyor which carried the fabric, piled in loose folds about a foot high, through the steam chest.

DIFFICULTIES. Operating difficulties were encountered very shortly after the unit was installed because the conveyor ropes did not stand up well when exposed to strong caustic solutions at high temperatures. Various treatments of the ropes with synthetic resins and substitution of fibers other than cotton did not prove successful. Therefore, a stainless-steel conveyor

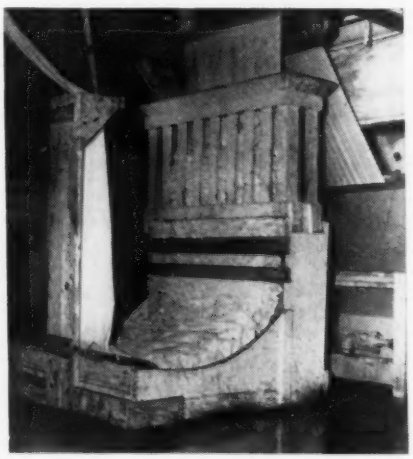
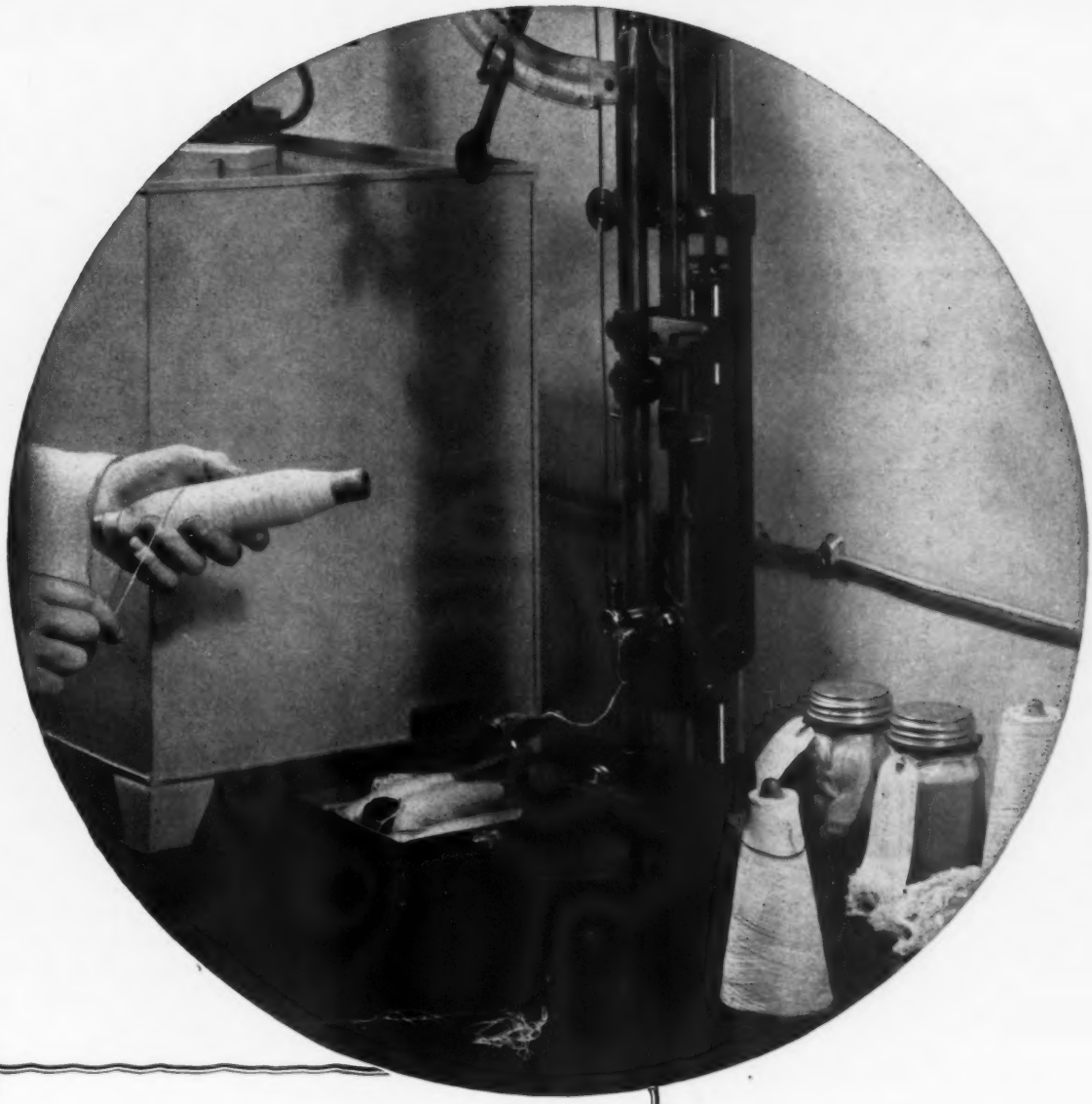


Fig. 4. This view shows cloth leaving washer at end of second steaming unit. The cloth goes on from the scray to a mercerizing range.



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This is the truck to take loads off your mind

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ELECTRIC
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similar in type to those used in raw stock dryers was soon substituted. This conveyor proved entirely satisfactory.

Most of the goods run on this steamer were heavyweight fabrics, such as 1.57-yd. herringbone twill, 1.75-yd. twill, and heavyweight poplins to be dyed into dark shades for use by the Armed Forces.

The goods were laid out in the gray room, singed, and then impregnated with a solution consisting of approximately 6% caustic soda to which had been added a small amount of detergent and penetrating agent. The caustic saturator was operated as hot as possible, usually about 185° F. The goods then entered the steamer, where they were steamed for 40 min. at a temperature of 210 to 212° F. After steaming, the cloth passed through a 3-compartment, open-width washer. In this, the water was counter-flowed and the temperature was maintained at 170° F., or hotter. Two things were found to be very important in securing a good dye bottom—first, avoidance of cooling of the cloth before washing; and, second, keeping the wash water as hot as possible. On leaving the washer, the goods were mercerized, again washed, dried, and then were ready for dyeing.

Production from the single steaming unit depended on operating speeds, which averaged 70 yd. a min. During the war, two women operated the steamer, though in addition, the part-time services of a chemical make-up supervisor were required.

As the result of experience obtained from the operation of this unit, two drastic changes were planned in the steamer design: first, turning the goods from one position to another during the steaming period seemed likely to give improved scouring or bleaching results; and second, a double-unit steamer was conceived which would go into the same floor space as occupied by the older, single-conveyor steamer.

NEW TYPE. These ideas led to the development of a double-conveyor steamer as illustrated in Fig. 1. In the first unit, the cloth passes through a caustic saturator, then goes overhead to a mezzanine and enters the first steaming section. This is approximately 40 ft. long and contains two stainless-steel conveyors with one mounted above the other. Cloth is piled on the upper conveyor and on reaching the end is turned over on the other side and transferred to the lower. It leaves the steamer at the same end where it entered. The goods then pass through a washer on the first floor, from which they go into the second steamer saturator. Entering the second steamer, again located on the

The Armour Soap Sleuth

answers a Mill-Manager's questions about "411"

"Just what is this new "411" I've been hearing so much about?" Answer: "411" is Armour's new synthetic detergent developed specifically for industrial use. Chemically, "411" is the sodium salt of a sulphonated hydrocarbon . . . an anionic surface-active agent having high wetting and detergent properties.

"What properties of "411" make it useful to me?"

Answer: "411" is an efficient wetting-out agent that lowers surface tension sharply, even in low concentration . . . is readily soluble in hot or cold water . . . is unaffected by hardness of water . . . rinses easily and completely, leaves no film . . . can be used in acid or alkaline solutions, in a 1% solution has a pH of 8.5 . . . has good emulsifying properties . . . is stable to oxidation . . . is white in color, with no objectionable odor . . . is exceptionally uniform in performance and appearance.

"What are some of "411's" important textile uses?"

Answer: "411" is effective in wool scouring even in hard water, particularly in the final low-temperature rinse—"411" is used in the scour after the fulling process to remove any residual fulling oils from woven woolen cloth—"411" may be used in the after-washing of cotton and rayon print goods to remove gums and other thickeners—"411" is excellent for the after-washing of resin finishes used for crease-resistant rayons and prevents the development of odor during storage—"411" may be used with alkalies in the kier boiling of cotton grey goods for whiteness and absorbency. For silk degumming, "411" used in combination with soap gives more rapid rinsing and prevents formation of lime soaps—"411" added to regular bleaching agents gives more uniform bleaching results—"411", as a penetrant and wetting agent, serves as a leveling agent to give more even shades in dyeing operations.

"Remember—it's ARMOUR'S for the best in SOAPS AND SYNTHETIC DETERGENTS"

Armour INDUSTRIAL Soap

Armour and Company, 1355 W. 31st., Chicago 9, Ill.

DARNELL
CASTERS & WHEELS

Whether for light, medium or heavy duty use, Darnell Casters and Wheels are built to take punishment.

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mezzanine above, the cloth travel is the same as in the first unit. However, the second unit is some 10 ft. shorter, both overall and as to length of the conveyor belts. The cloth is again washed in a washer, also located on the first floor, from which it passes onto the mercerizer, etc.

In this preparation, the cloth is not touched after it is sewn together in the gray room until it is ready for dyeing and finishing. The double-conveyor arrangement has been found to give a more uniform style bottom and absorbency than that obtained from the single-conveyor type unit. Drip, which was a problem in the original steamer, has been overcome by the installation of a stainless-steel false roof in the newer type. The two double-conveyor steamers can be used for either double caustic steaming, caustic steaming and bleaching, or double bleaching, as desired. As a result, a flexible system for handling heavy goods in open width during preparation is provided. It is possible by selection of the proper preparation method to prepare goods for whites and pastel shades, as well as for medium and dark shades.

Pick Troubles

(*Continued from page* 123)

that it picks up the filling of the depleted bobbin and holds it at one end and cuts it at the other at every transfer. After making any adjustments, loomfixers should test the cutter by making the magazine transfer three or four times on each shuttle, to make certain that everything is in perfect working order. There is a possibility that a cutter will work perfectly on one change and then miss the rest. This is also true when more than one shuttle is used, as each shuttle may hold the filling in a different position. The cutter must be adjusted to take care of all shuttles. If the cutter is too high, the filling end will go under and miss completely; if it is too low, the end will slip over the top.

CUTTER ADJUSTMENT. When weaving a fabric with a fine filling, the cutter must be raised as the filling will be up from the race plate. Coarse filling will usually drop down on the race plate and the cutter must be set lower.

Rebounding shuttles may cause the filling to loosen and drop down on the race plate below the blade of the cutter.

Rough places on the binder or binder mouth-piece, or any other place where the filling may catch and cause trouble, should be eliminated. Position of the filling strand can be observed

Solving your SIZING puzzle

Photo: Courtesy of American Viscose Corp.

This protein powder meets every requirement of the perfect sizing product. CETASIZE is complete—no softeners or penetrants necessary...CETASIZE is uniform—as are all Stein Hall products passed by Stein Hall laboratories...CETASIZE is easily removed—no prolonged soaking; soaping does the trick...CETASIZE runs clear—no foaming...CETASIZE is easy to prepare—disperse in cold water, then heat to approx. 175° F. Hold 10 minutes, then use...Request a sample today—or ask for a Stein Hall man to come and demonstrate!

Stein Hall produces a complete line of: *Textile Starches, Gums, Dextrines and Specialty Products, W Gum D, Victory K2W Gum; RTF Gum; KAC No. 4 with B-2 or Sussex Gum; 96R, Velveen XX; RTC Gum; Cetosol SF; Sho-Pal Thickener and Binder.*

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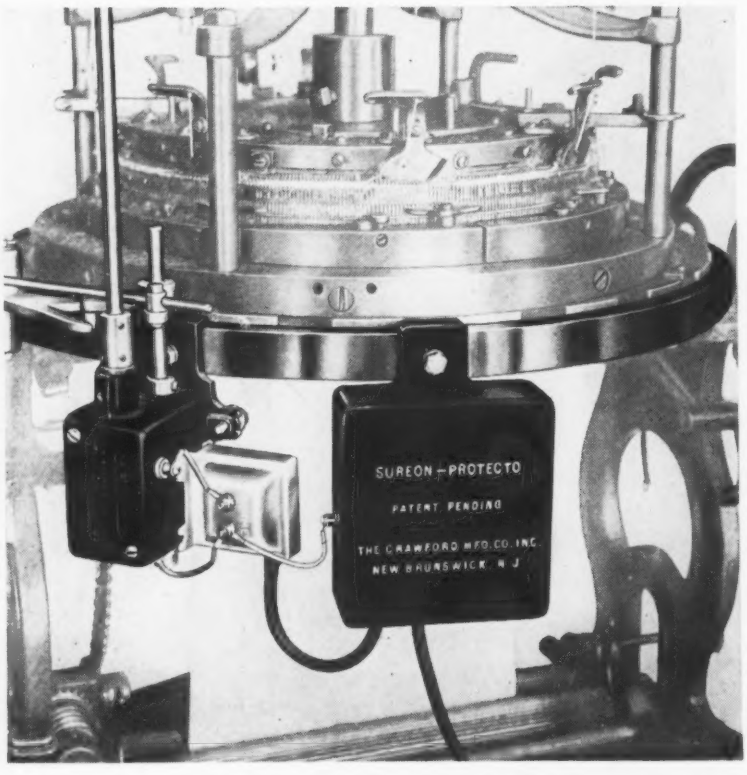

As Shown at the Knitting Arts Exhibition

NEW CRAWFORD SUREON-PROTECTO BOX

If a fuse blows on the lighting line, or if the plug which is attached to the stopmotion is accidentally pulled out of the socket, the Sureon-Protecto Box will instantaneously and automatically stop the knitting machine. This prevents the machine from operating without the stopmotion protection and prevents serious smash-ups. This box can easily be attached to Electric Stopmotions already in mills, and may be ordered when placing new orders for stopmotions directly with us or with machine builders.

Specify Crawford Electric Stop Motions and you specify the finest. Copy of our new catalog sent on request.

Designed & Manufactured by

The CRAWFORD MFG. CO., INC.

Established 1891

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when the loom is running by having the eyes at the same level as the race plate on the lay.

Double picks in the fabric on the side opposite the magazine are caused by the outgoing bobbin at the time of transfer not pulling the filling thread clear of the shuttle eye when it drops into the bobbin can. This trouble may be caused by a number of conditions. The cutter must cut the tail end so that the bobbin will draw the end clear; otherwise the end will break and be dragged into the fabric on the first pick after transferring. Binder leather bulging into the groove of the shuttle will cause the end to break. A shuttle which is worn so that the groove does not keep the filling free of binder pressure will also cause a break. These conditions are remedied by trimming the bulge from the binder facing and filing a deeper groove in the shuttle. If the eye of the shuttle gets plugged up with waste, the filling will break and leave an end in the shuttle eye.

Continuous Bleaching

(*Continued from page* 131)

dyed yarns; for, although the colors used are the fastest types, their shade may be affected to some extent in the bleaching operations, unless these operations are carefully controlled both chemically and mechanically.

ROUTING OF CLOTH. Goods are first laid out in the gray room and sewn, after which the preparation procedure is as follows:

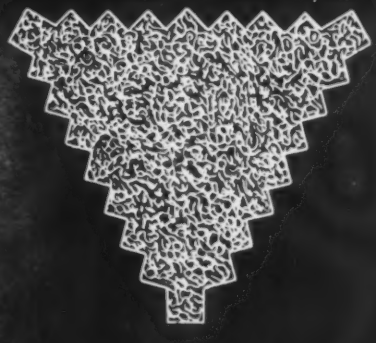
1. Desize
2. Wash
3. Partially dry
4. Mercerize
5. Wash

The goods may then be bleached.

BLEACHING PROCEDURE. In bleaching, cloth first passes through a wash box, a squeeze, and then into the hydrogen-peroxide saturator. This saturator is fed from a stainless-steel mixing tank, in which hydrogen peroxide and silicate of soda are made up to the strength required to maintain a saturator strength of approximately 1¼-volume hydrogen peroxide. From the saturator, goods enter the J-box for the steaming operation, which lasts approximately 1 hr. The goods leave the J-box after steaming and are washed through a 10-compartment slack washer. The wash may be either hot or cold as desired, although a cold wash is generally used. The bleached cloth is then piled in boxes in which it is taken to further drying and finishing operations.

Operations through the bleaching

LEADERSHIP IN QUALITY FOR 66 YEARS



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PRODUCTS FOR THE TEXTILE INDUSTRY

Ammonium Chloride

Caustic Potash

Caustic Soda

Liquid Chlorine

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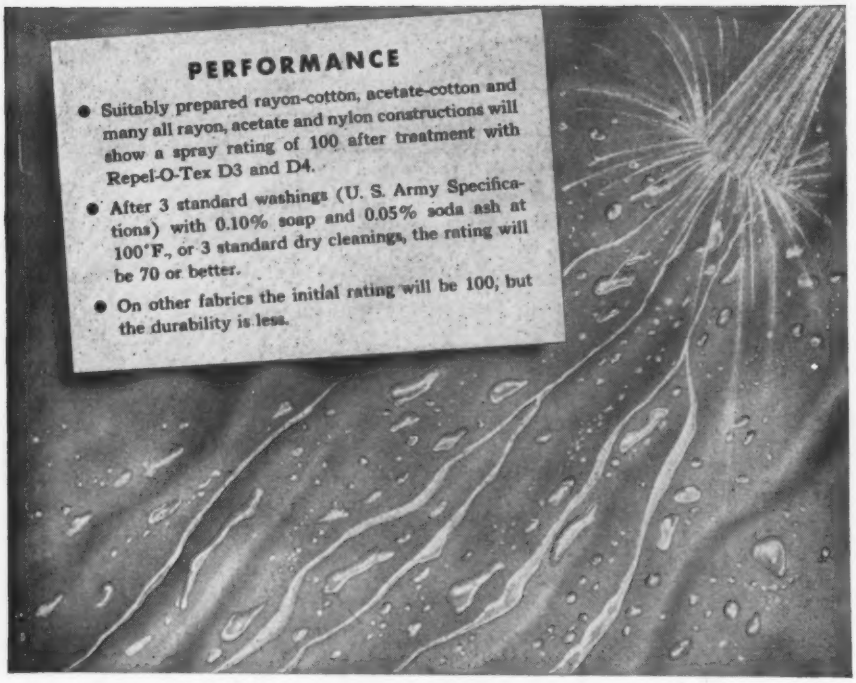
PERFORMANCE
• Suitably prepared rayon-cotton, acetate-cotton and many all rayon, acetate and nylon constructions will show a spray rating of 100 after treatment with Repel-O-Tex D3 and D4.
• After 3 standard washings (U. S. Army Specifications) with 0.10% soap and 0.05% soda ash at 100°F., or 3 standard dry cleanings, the rating will be 70 or better.
• On other fabrics the initial rating will be 100; but the durability is less.

For Durable . Low Cost Water Repellency . . . Use REPEL-O-TEX D3 & D4

THESE two complementary materials, used in combination, give exceptionally durable water repellency at a cost that is much less than that of any other durable treatment. Easy to apply in jig, pad or quetsch, *the treatment requires no curing or scouring.* The finish is also stain- and perspiration-resistant.

Any required hand or finish may be obtained by suitably varying the proportions of Repel-O-Tex D3 and Repel-O-Tex D4.

We'll be glad to arrange for a trial run.

PROPERTIES

Repel-O-Tex D3 is a stable, creamy white liquid dispersion. Repel-O-Tex D4 is a stable, light bluish green solution.

Mixtures of Repel-O-Tex D3 and D4 are stable at temperatures up to 158°F. (70°C.) for one hour. At 122°F. (50°C.) they are stable for five hours. Mixtures are readily soluble in water, and are compatible with hard water. Cloth to be treated should be free of cationic softeners, sizes and detergents.

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range are entirely in rope form, except for the opening arrangement after they leave the 10-compartment washer. Thus, they are ready for subsequent drying in open width. Range speeds average 125 yd. per min., although the unit may be run faster or slower.

This J-box is of the type in which the steam is directly applied to the cloth in the box, through steam chests located on both sides of one of the J-box sections. There is also provision for steaming from the bottom of the curved section of the J-box; and when goods are first introduced into the empty J-box, steaming is done at this point. After the cloth has reached the operating level in the upright part of the J-box, steaming is discontinued in the curved bottom section, and commenced through the steam chests in the upright steaming section. Cloth level in the J-box will average 4 ft. above the steam chests, although this may be greater in some instances. The Highland Park J-box is 5 ft. wide and has a capacity of 2,000 lb. of goods.

CENTRAL CONTROL. The speeds of all the driven equipment may be individually or collectively controlled from a central control panel. This panel also contains a steam-flow meter to record instantanetous and cumulative flow of steam to the J-box. There is also an electric tachometer, which, by measuring the peripheral speed of the saturator squeeze rolls, indicates the speed of the cloth.

This arrangement makes for simplicity of operation and also enables the operator to know existing conditions at all times. The Highland Park Mfg. Co. installation is now processing regularly all the goods manufactured by this plant which require bleaching.

Stream Sanitation

(*Continued from page 125*)

itself," Dr. Johnson asserts. "We hope to be prepared ahead of time, so that when the crack-down comes, our members will have facts upon which to base a system of textile-waste treatment. We also hope to have facts, so that our members could not be imposed on if a cow happens to die after drinking what may be nothing but very innocent colored water. Parenthetically," he adds, "some colored water may not be so innocent."

FOUR-FOLD APPROACH. Dr. Johnson reports that the institute is making a four-fold approach to the problem of textile wastes. The first phase is fundamental or "test tube" research, for the purpose of building up a store of fundamental knowledge by laboratory experiments, upon which the best

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Stops Gelling

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Speeded-up production has taken its toll of plant equipment. Break-downs and unexpected failures are more numerous.

A thorough check-up now will pay dividends. And don't overlook your steam, water, and air lines. A sudden valve failure might mean loss of valuable power and production.

But should valve trouble occur, you can get help . . . quickly . . . from your near-by Lunkenheimer Distributor. Long established in the community, he has thoroughly experienced personnel and adequate stocks . . . all the facilities and "know-how" for solving your valve problems.

Whether it's an emergency call, routine repair and maintenance service, or a new installation, phone your Lunkenheimer Distributor for fast, dependable service.

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THE LUNKENHEIMER CO.
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techniques of treating textile wastes on a large scale can be founded.

The second phase of ITT's stream-sanitation research program is a detailed chemical and biological study seeking to determine the injurious or toxic qualities in waste matter and, hand in hand with this endeavor, to arrive at methods for removing the toxic elements. As far as present findings go, there are few toxic substances in textile effluents, Dr. Johnson states. Among the more harmful materials are sulfur-dye wastes, caustics, and certain salts. It is conceivable, he points out, that the chemical change during treatment of some complicated organic compound might change it from a harmless material to a toxic one. For this reason, ITT biologists test all kinds of textile wastes, both before and after treatment, making the tests on fish and other forms of stream life to determine the toxicity of the effluents on common stream life.

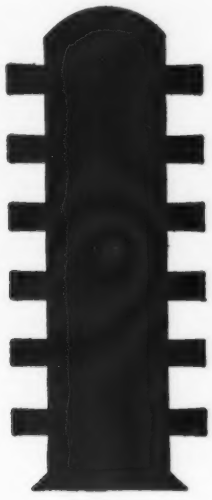
"The spectacular fish kill is what brings the Isaac Walton Leaguers charging on the scenes; but as biologists, we suspect far greater harm is done fish by the adverse effect of pollutants on the food which fish eat," declares Dr. Johnson. "The over-all, persistent, and continuous loss by starvation, leading to small fish, weak eggs, and weak young, depopulates our streams of fish far more than does the occasional fish killing that occurs."

CAUSTIC AND DYES. Chemically, the principal problems now apparent, in terms of volume, are (1) discharged caustic from kiering and other operations and (2) the dye wastes. Caustic, being very soluble and in low concentration, presents especially difficult problems, Dr. Johnson reports. Caustic from mercerizing is another matter, however; and already certain practical methods are in use for handling that waste. Dye wastes constitute a problem because of the difficulty in removing such relative high concentrations of color, in the first place. Dye wastes are also a special problem because of their multiplicity and diversity. Such wastes are also more readily noticeable to the lay public—even though they may know the coloring matter in a particular stream is harmless, few people care to swim or fish in colored waters.

All factors in the handling of wash waters, desizing, and other wastes are being studied. Dr. Johnson adds that almost daily his staff is told of new chemicals, particularly resins, which are to be introduced into the textile field. Insofar as such new chemicals are discovered to be stream polluters, means of treating them will be sought.

To solve the problem, biologist and

These are the shapes of things to come



THEY WILL MEAN INCREASED PRODUCTION OF WYANDOTTE CAUSTIC SODA AND SODA ASH

New lime kilns, distillers, carbonators and dozens of other massive units are now being erected at Wyandotte Chemicals Corporation. When completed, they will enable us to produce additional quantities of many industrial chemicals.

But the job cannot be done "overnight."

Practically all the multiple-ton equipment needed must be "tailor-made." Enormous castings must be poured. Heavy machinery placed. In the construction of a single 310-ton, 15-story distiller, tens of thousands of man-hours are required.

Despite continuing shortages of steel and other essential materials, we are making good progress on our $25,000,000 plant expansion program.

In the meantime, the available supply of Caustic Soda, Soda Ash and other Wyandotte chemicals is being allocated with the utmost fairness to our regular customers. And we look forward to the day when we can supply more.

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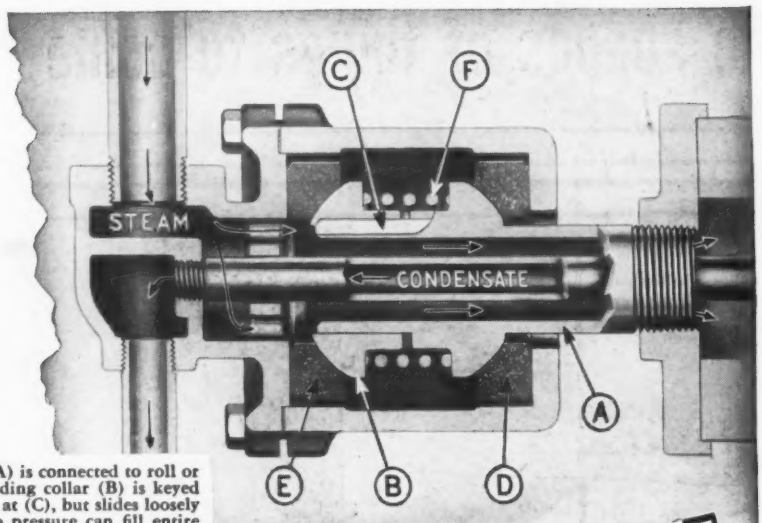

Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, by pressing seal ring (D) tightly against nipple. Both seal ring and bearing ring (E) are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only. Type B Joint illustrated; other types, sizes for all needs.

...it's the biggest little trouble-saver in the mill...

In terms of physical size alone, the Johnson Joint could hardly be called big machinery. But in its ability to save time and trouble, and promote plant efficiency, its stature approaches anything the industry has ever seen.

The Johnson Joint was designed to go after the old stuffing box and steam fit troubles in a business-like way, and it literally knocks the stuffing out of them. There's no packing of any kind. There's no oiling required, ever. There's no adjusting — the higher the pressure, the tighter the seal. There's little to fear from misalignment—with provision for both lateral and angular movement built right in. Note besides how neatly it provides for more efficient syphon drainage, through the same head that admits the steam.

In dollars and cents, what does all this add up to? Well . . . enough at least to pay the cost of switching over to Johnson Joints in just a short while. Enough certainly to make the Johnson Joint too big to overlook.

Write for literature and the name of your nearby Johnson representative.

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Rotary Pressure
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chemist must work as a team. The biologist, knowing the reactions of animal life to chemicals, helps direct the chemist to those treatments of wastes which will likely be less harmful to stream life. At the Institute of Textile Technology, Dr. Eugene W. Roelofs, who was associated with the Michigan Institute for Fisheries Research for five years prior to his service in the Army Air Forces, conducts a major portion of the tests on effects of various mill wastes on life forms common to American streams.

For the chemist, the institute has been provided a laboratory in one of its member mills, where research workers, given full run of the plant, may study waste materials actually as they are produced. This arrangement also gives the chemist and his assistants sufficient volumes of many types of pollutants to make any required study, either in the test tube or in pilot plants. Several pilot plants will be in operation in the near future.

Dr. Johnson takes care to define clearly his use of the word, "treatments." In the work being done at ITT, he says, treatments mean the employment of any practical and economical method of negating color, caustic, solids, and toxic materials found in mill effluents. In some cases, this may mean the simple neutralization of a waste before it is released into the stream. In others, it may mean the conscious, proper compositing of certain waste elements in the plant and the segregation of other elements. There is complete open-mindedness as to what the final treatment, in any given situation, will be. It is now believed that promiscuous compositing cannot be employed, but that separate types of wastes will require separate types of treatment.

COST INVOLVED. The cost factor is given emphasis in the third phase of ITT's stream sanitation research: It is hoped that knowledge gained from laboratory studies will help to find economical and practical means of applying the results of fundamental laboratory research to full-scale waste elimination operations in mills. "The treatments we finally propose must be economical, practical and 'sure-fire' in their operation," Dr. Johnson stresses.

Finally, the fourth broad path of investigation consists of a search for outlets whereby chemicals recovered from mill wastes may possibly be utilized again. As yet, there is no particular assurance that re-utilization of wastes can be achieved on an economical basis. Re-use would be helpful in making any treatment process economical. Dr. Johnson points to the possibility that prevention of waste

WEAVING RUGGED BEAUTY INTO LONG-WEARING UPHOLSTERY FABRICS

There's a growing swing toward the new, compelling fabrics that are being woven of SARAN monofilaments in fascinating colors, textures and patterns. For these exciting upholstery materials are rugged enough to take the roughest kind of wear—laugh away dirt, spilled drinks, even acids. In short, furniture upholstered in SARAN fabrics doesn't have to be pampered!

Today's markets hold greatest possibilities for top quality products . . . and manufacturers are finding that these tough SARAN yarns are weaving a selling story that's irresistible.

SARAN BY NATIONAL denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Saran, a vinylidene chloride copolymer made by The Dow Chemical Company and supplied to mills, weavers and other fabricators for specific end uses.

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within an operation, in order to avoid treatment of excessive amounts of waste, might effect savings fully equal to the value of any materials recovered and re-used.

An incentive far more stimulating to this research undertaking than the intelligently written anti-pollution laws and their common-sense enforcement is the encouraging attitude of the public as a whole and the spirit of men within the textile industry, declares Dr. Johnson. Textile men agree wholeheartedly that the pollution of streams should not be tolerated.

Cotton-Maturity Tests

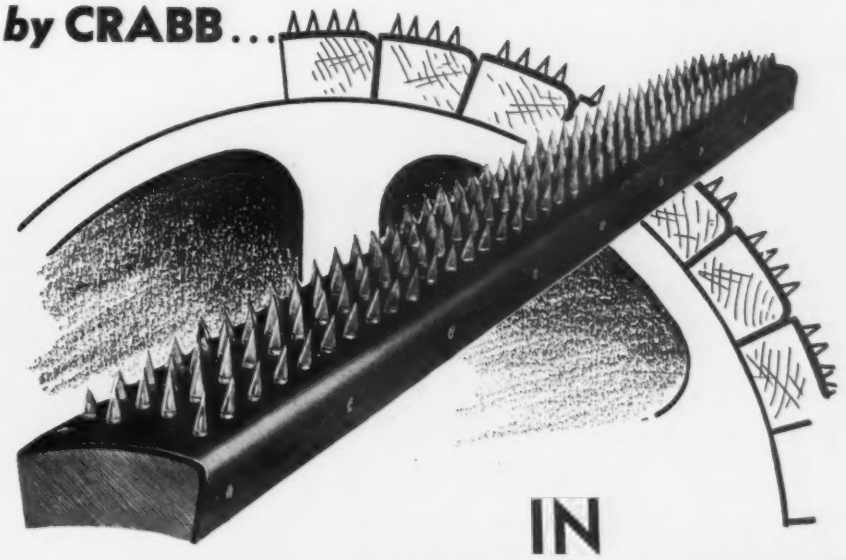
(*Continued from page 108*)

cating larger proportions of thin-walled or immature cotton. A Wilds 13 sample had fewer of either the extreme red or the extreme green fibers and appeared the most uniform. These comments, based on dyeing, have been substantiated by microscopic examination. Some of the fibers representing the extremes of color as found in an Empire cotton are illustrated in Fig. 1, the green apparently including thin-walled nep-forming fibers.

It can be readily seen from differential dyeing that mature and immature fibers may come off the seed in tufts in the gin, with either type predominating in a given tuft, in accordance with the recognized fact that immature fibers in commercial ginned cotton are likely to occur in such groups[3,4,5]. Numerous dyeings have shown that tufts, although perhaps reduced in size, persist up to carding in cotton manufacture. Even though these tufts may then be broken up there is a great tendency for small parallel groups of thick-walled and of thin-walled fibers to remain together so that small groups of each, mature and immature fibers, are present in card sliver, and may still be found after subsequent mill operations. Such observations serve to emphasize the difficulty of obtaining representive small samples from larger lots of cotton and suggest differential dyeing for checking sampling procedures. Processed stock which seems well mixed may be seen, after dyeing, to require much more thorough mixing before small samples are taken, such as those of a few hundred fibers.

On the other hand, the same dyeing technique has been utilized to aid in sampling cottons to obtain fibers with properties different from the average, when the dyeing does not interfere with the subsequent use of the material. For example, it has already assisted in the selection of fibers of different degrees of development, readily taken as groups from seeds of known

NEW DEVELOPMENTS
by CRABB...



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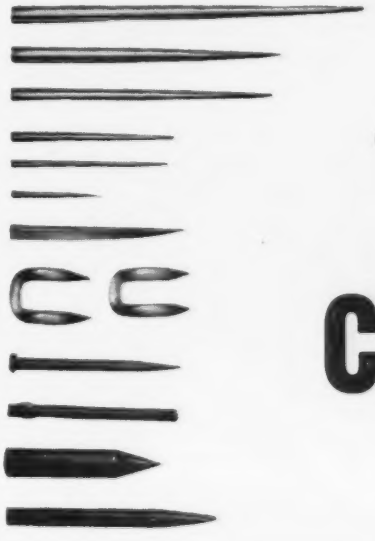
This is almost one year's operation on the toughtest type of material that we have ever processed. Many of the other lags we have installed during this past year have lasted only a very short time, some of them only a few weeks while this lag appears to be good for many more months of service.

Crabb Pins and Lags are better and stronger today than ever before. The steel backed, steel faced Lag shown above is one of our many developments, as are also our laminated steel lags for extra heavy duty. We also now produce stainless steel as hard as carbon pins, passivated to remove all exterior carbon, leaving the stainless surface. New polishing methods give an extra high polish to pins. Surfaces are etched—rough surface, black or blue oxidized surfaces.

PINS carried in stock in a wide variety of types and sizes. Immediate delivery on most orders.

Whatever your operating problems regarding Pins and Lags, our technical staff is ready to help you. Write for quotations—or for a Crabb man to call on you.



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Great strength despite light weight, a physical characteristic of many acrobats, is also an attribute of A.P.T. Yarn Carriers. The lightweight construction saves vital power consumption. Their great strength, with laminated paper impregnated for moisture resistance, hardened by baking and reinforced at tip and base when necessary, insures longer life.

A.P.T. Yarn Carriers are tried performers on the textile mill circuit. They have perfect balance and perfect spindle cling which minimize vibration and reduce slippage and wear. You get the best carrier for your purpose when you specify A.P.T.

Other industry requirements for the perfect yarn carrier which A.P.T. Products satisfy are: Resistance to distortion and splitting, freedom from chipping, splintering and static, deep, well rounded corrugations that promote free but controlled delivery, and low ultimate cost.

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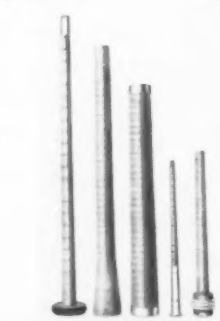

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ESTABLISHED 1898

WOONSOCKET, R. I. GREENVILLE, S. C.

SALES OFFICES IN NEW YORK AND CHICAGO

history, and easily selected from most loose cottons.

USES IN COTTON MANUFACTURING. The first application of the differential dyeing technique was to the diagnosis of trouble experienced by a cotton mill in manufacturing processes and in dyeing. Some of the cotton being used in blends was found by this special method to dye greenish in contrast to the larger proportion of the mix which dyed red. Examination of cross sections under the microscope showed clearly that the green-colored cotton was mainly of very thin-walled (immature) fibers. This sort of cotton, either poorly blended or present in too large a proportion, was thus identified (Fig. 3) as causing uneven or "stringy" dyeing in a raw-stock dyeing machine, and having a tendency to shrink away from the sides and cause channeling; as causing a large amount of waste, accompanied by matting and other difficulties during the manufacturing operations; and, finally, as causing an inclination toward prominent neps and filling bars in cloth. Cottons within some commercial lots were found to differ as greatly as the two represented in Fig. 3 which had maturity counts of 40% for the green-dyeing and 83% for the red-dyeing cotton. No doubt cottons differing so greatly in fiber properties need special care in blending. Since the bales with excessive amounts of immature cotton were actually purchased for mill use, it seems that the classer did not fully recognize the difference in the cottons or foresee its possible effect on manufacturing.

A 100-lb lot of each of these cottons was made into yarn, woven into cloth as warp and filling, respectively, and piece-dyed by the differential technique with the great difference in shade between warp and filling shown in Fig. 3—purposely exaggerated, of course, over the smaller but serious difference that would be expected in practical dyeing.

Thus, the differential dyeing method, although not yet applied to a wide variety of cottons for checking commercial selection, has, in certain cases at least, enabled the less desirable cotton to be distinguished, and may thus contribute to the selection f cotton according to character.

Since the dyeing method can readily be used on a number of samples at once, it can be applied to the components of a proposed blend, with the samples suitably enclosed in gauze and dyed all together, to indicate roughly the amount and distribution of immature fibers. Or, since large amounts of cotton can be tested at once, the method can readily be applied to large

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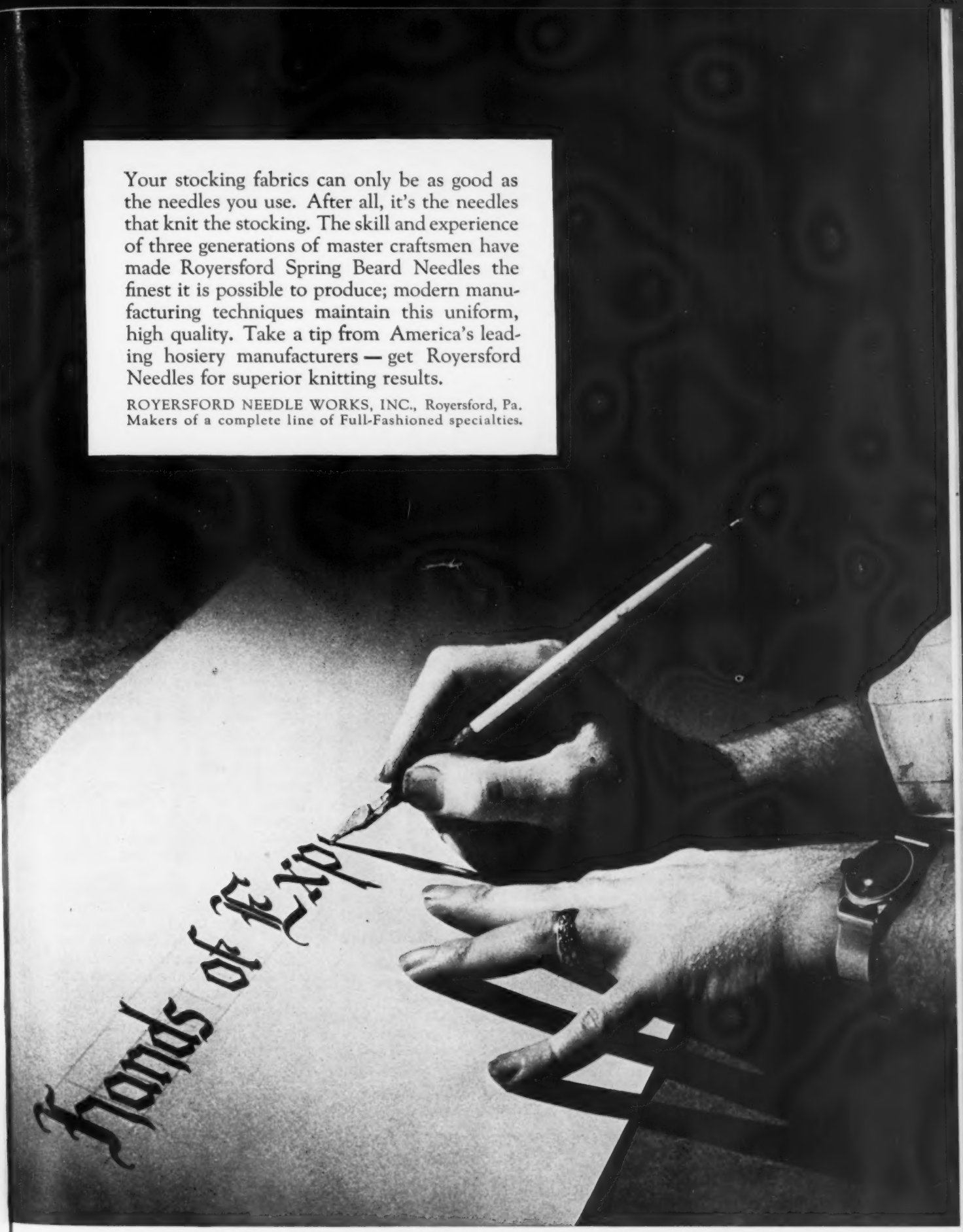

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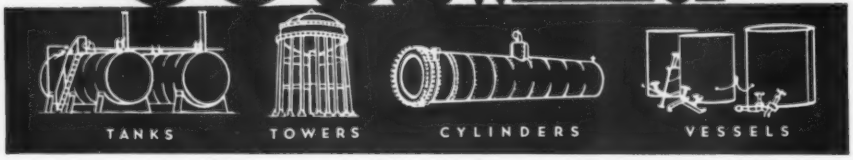

samples from mill blends already made, to check their uniformity.

Although tried so far to only a limited extent, differential dyeing has been found useful for following stock and the corresponding waste through manufacturing to determine whether immature fibers are well blended with the rest or whether they are removed during the manufacturing processes.

MATURITY OF COTTON. As already noted, the terms maturity and immaturity are being used in connection with differential dyeing in the same general sense as employed in routine estimates of maturity. Such estimates are based on *wall thickness* as found in cotton samples without regard to the causes of observed differences. As a result of many observations it appears very certain that the fibers which dye reddest and greenest in any cotton are the most mature and the most immature, respectively, on the basis of wall thickness (except for the extreme "dead" or nep-forming fibers).

Portions of differentially dyed cottons may appear gray since the red and green are approximately complementary colors. Speaking generally, there seem to be both definitely red and green fibers of different degrees of grayness, particularly from cotton to cotton, and there may be fibers of such wall thickness as to dye approximately neutral gray. However, the hot washing usually brings out a pronounced green, and not enough actual gray fibers have been found so far to have any special significance. On the other hand, grayish portions due to *admixture* of red and green fibers are common, and usually if "pulled" parallel and held taut, fibers of the separate colors can be easily seen in small groups.

Practically all of the raw cottons dyed so far have each appeared to consist almost entirely of two groups of fibers, distinguishable by differential dyeing and by their cross sections, accompanied by a much smaller number of extremely thin-walled fibers. This seems comparable with the placing of cotton fibers into one or the other of two groups when counts are made for maturity and immaturity.

The presence of relatively large amounts of the fibers as colored tufts suggested a separation by color to determine the percentage (by weight) of maturity, but it has been found impossible to complete such separation after the fibers of most pronounced red and green color have been removed from a sample. There is a residue, frequently grayish in color and usually consisting of red and green fibers too intimately mixed to be separated.

The differential dyeing method

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may, however, be applicable to the estimation of maturity, by means of the resulting total color effect even though the direct quantitative separation of the differently colored fibers does not seem promising. Comparison of dyed samples is difficult when fibers are present in differently colored tufts but can be simplified by cutting to a near-powder (20-mesh) in a Wiley mill which enables a sample to be mixed to a uniform color very easily. If the cotton is then suspended in water containing a small amount of wetting agent and an adhesive—for example, 0.1% of Deceresol OT and 5% gum arabic—it can be filtered out with suction on a coarse fritted disk to form a smooth flat pad, and then removed from the disk by careful use of air pressure. A series of such colored pads can usually be placed in the order of color easily by visual inspection, and can no doubt be evaluated by optical methods. The dyeing of known reference samples at the same time with each series of unknown cottons may ultimately allow quantitative estimates of maturity. Good qualitative correlation has already been observed in a set of dyed samples varying from 78% to only 22% maturity.

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ACKNOWLEDGMENT. The authors' thanks are due many members of the staff of the Southern Regional Research Laboratory for advice and help; particularly to the Cotton Fiber Research Division, especially to Miss I. V. deGruy for many cross sections without which the differential dyeings could hardly have been interpreted; and to the Cotton Processing Division for the manufacture of special yarns and cloth. Appreciation is also due the Bureau of Plant Industry, Soils, and Agricultural Engineering of the U. S. Department of Agriculture for helpful discussions, especially to Dr. E. E. Berkley who made the suggestion and supplied the dated cotton seeds for Fig. 2.

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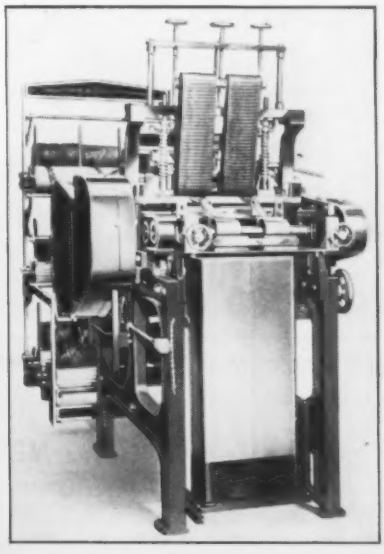

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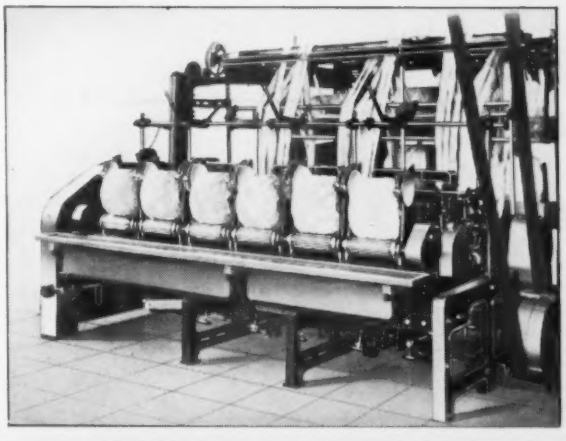

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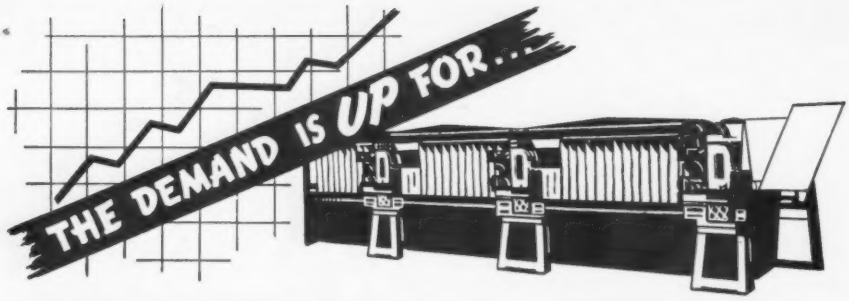

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Textile Exposition

(*Continued from page 147*)

Sons Silk Co., Stehli & Co., Beaunit Mills, Greenwood Mills, J. P. Stevens & Co., Stonecutter Mills Corp., Newnan Cotton Mills, Bates Fabrics, Bloomsburg Mills, Frank Ix & Sons, Verney Fabrics Corp., M. Lowenstein & Sons, Native Laces & Textiles, Turner Halsey Co., Riegel Textile Corp., S. Stroock & Co., Chelmsford Worsted Co., etc.

Finishers: Sayles Finishing Plants, Inc.; Bradford Dyeing Association, Bellman Brook Bleachery Co., Joseph Bancroft & Sons Co., United States Finishing Co., United Piece Dye Works, Cranston Print Works Co., Allied Textile Printers, etc.

Chemical Producers, Machinery Makers, etc.: Monsanto Chemical Co., National Aniline Div. of Allied Chemical & Dye Corp., Stein Hall & Co., S. Blickman, Inc., Van Vlaandren Co., U. S. Hoffman Machinery Corp., etc.

Many of the booths were outstanding in striking originality of display through beautiful color combinations such as found in the Schwarzenbach Huber Co. exhibit, through novelty such as found in the National Aniline Products booth with its constantly changing background of a curtain formed of a hanging mass of bubbles, through the stressing of tested quality as was done by Concordia Gallia Corp., or through technical interest as in the exhibit of American Viscose Corp.

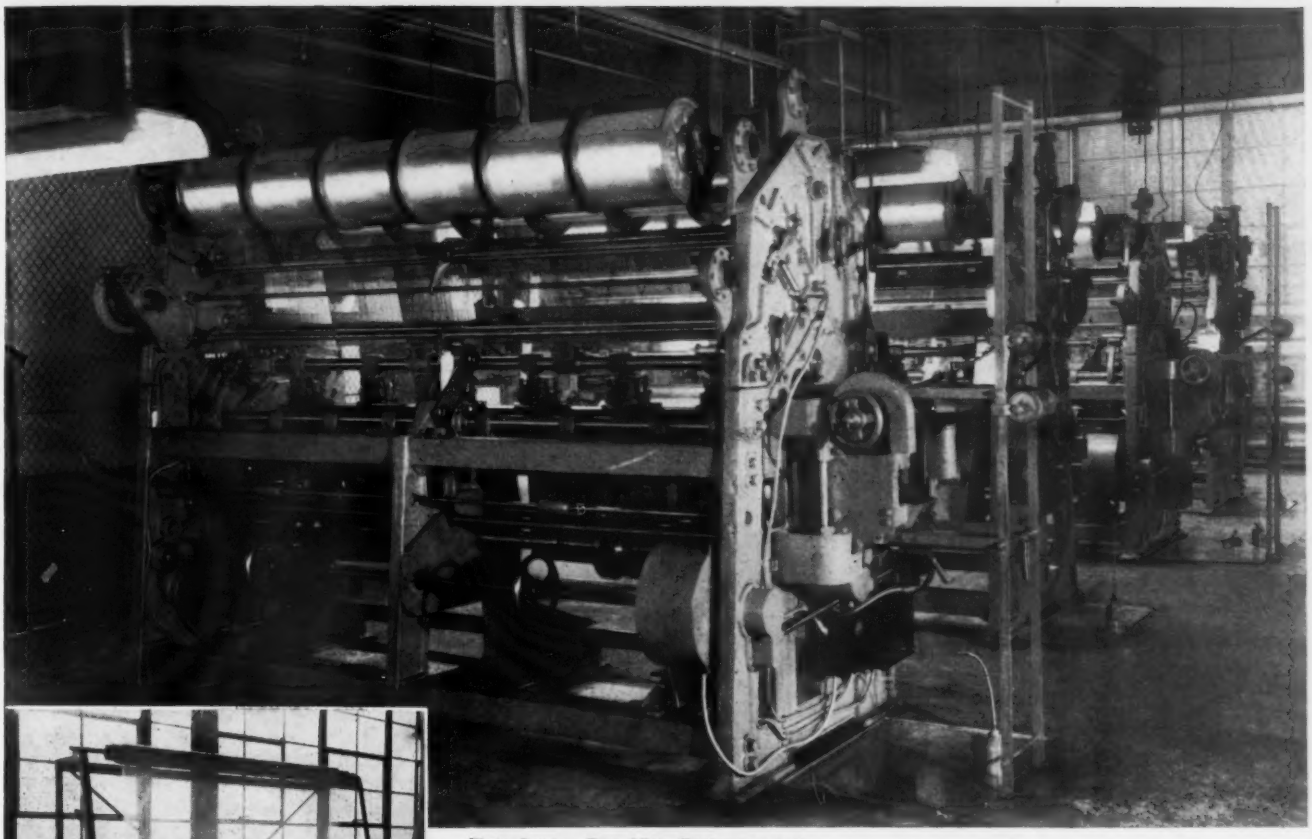
Yarn Conveyor

(*Continued from page 145*)

Conveyor Co., Ellwood City, Pa., and installed by the Reid Mill shop crew. There are five 4-ply rubber belts operated by ¾-hp. motors, and the lengths range from 18 to 250 ft. The belts have a special crepe surface to improve the surface-gripping factor. They were made especially for the Reid installation by the United States Rubber Co. plant in Passaic, N. J. The fabric for these belts was made in the Reid Mill. Use of these belts in its own plant gives the company an excellent opportunity to check their service and life. The installation eliminated one elevator man per shift. No operator is required for the conveyor system.

Boxes last longer under the conveyor system. Formerly, they were dropped or dragged along the floor, or stocked in yarn-storage areas. While the reduced wear on laminated boxes cannot be accurately calculated, it is nevertheless an apparent item in the over-all benefits effected.

Elimination of dumping not only reduces operator fatigue, but also results indirectly in other advantages. It means that yarn is handled one time



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Says the *"Daily News Record"* in its issue of May 6, 1947: ". . . The 25 development cloths which have been made on these machines include combinations of nylon, cotton, and rayon with rubber yarn; combinations containing aluminum yarn; a number of women's wear fabrics of all-viscose; all-wool fabrics mostly of coarse counts; drapery fabrics, chenilles, and brushed fabrics. . . ."

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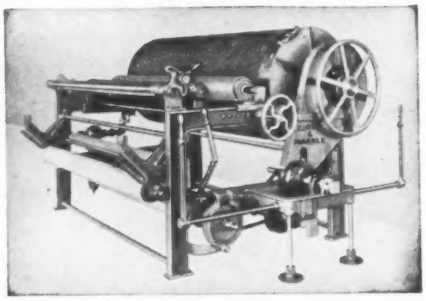

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New Labor Law

(*Continued from page 113*)

their employment to use, manufacture, process, transport, or otherwise handle or work on any goods, articles, materials, or commodities or to perform any services.

The foregoing applies when the purpose of such strike or concerted refusal is to: (a) force or require you or a self-employed person to join any labor or employer organization or to force or require any employer organization or to force or require any employer or other person to cease using, selling, handling, transporting, or otherwise dealing in the products of any other producer, processor, or manufacturer, or to cease doing business with any other persons; (b) force or require you to recognize or bargain with a labor organization as the representative of your employees, unless the labor organization has been certified as the representative of your employees; (c) force or require any other employer to recognize or bargain with a particular labor organization as the representative of his employees if another organization has been certified as the representative of such employees; (d) force or require you to assign particular work to employees in a particular labor organization in a particular trade, craft, or class rather than employees in another labor organization unless you fail to conform to an order or certification of the board determining the bargaining representative.

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1. report the name and address of their principal place of business.
2. report the names, titles, and compensation and allowances of their three principal officers and of any of their other officers or agents whose aggregate compensation and allowances for the preceding year exceeded $5,000.
3. report the manner of election of the officers and agents referred to above.
4. report the initiation fees.
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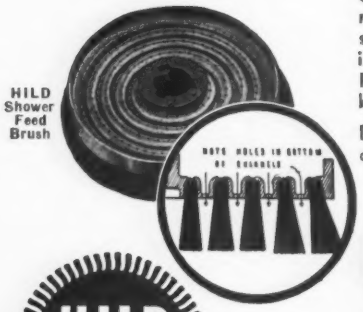

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or restrictions on membership; (b) election of officers and stewards; (c) calling of regular and special meetings; (d) levying of assessments; (e) imposition of fines; (f) authorization for bargaining demands; (g) ratification of contract terms; (h) authorization for strikes; (i) authorization for disbursement of union funds; (j) audit of union financial transactions; (k) participation in insurance or other benefit plans; (l) expulsion of members and the grounds therefor.

7. **file with the Secretary of Labor a report showing all of (a) its receipts of any kind and the sources of such receipts; (b) its total assets and liabilities as of the end of its last fiscal year; (c) the disbursements made by it during such fiscal year, including the purposes for which made.**
8. **file annually with the Secretary of Labor reports bringing up to date the information required to be supplied in the initial filing.**
9. **furnish to all of its members copies of the financial report, which is required to be filed with the Secretary of Labor.**

B. UNIONS DESIRING to negotiate a change in terms on expiration of a contract must give 60 days' advance notice. The *status quo* must be maintained during the 60-day period or until the contract expires, whichever is the longer period.

VI. Penalties for violation of the new law

For violation of the new law, the penalties are as follows.

AGAINST MANAGEMENT

1. **The board may order management to cease and desist.**
2. **The board may order management to dis-establish a company-dominated union.**
3. **The board may order management to reinstate employees with or without back pay.**

AGAINST THE UNION

1. **Unions have no immunity under the act.**
2. **The National Labor Relations Board may apply to the district court for temporary injunctions restraining such unfair labor practices pending a decision of the board on the merits.**

AGAINST THE INDIVIDUAL

1. **Union employees are subject to discharge without the right of reinstatement or back pay.**
2. **Employees who strike during the 60-day cooling-off period forfeit their Wagner Act rights unless and until they are reemployed.**
3. **The board shall not require the reinstatement of any individual as an employee or the payment to him of any back pay, if such individual was suspended or discharged for cause.**
4. **Any individual employed by the United States or any agency thereof, including wholly owned Govern-**

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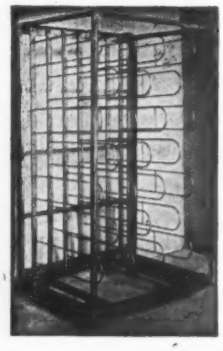

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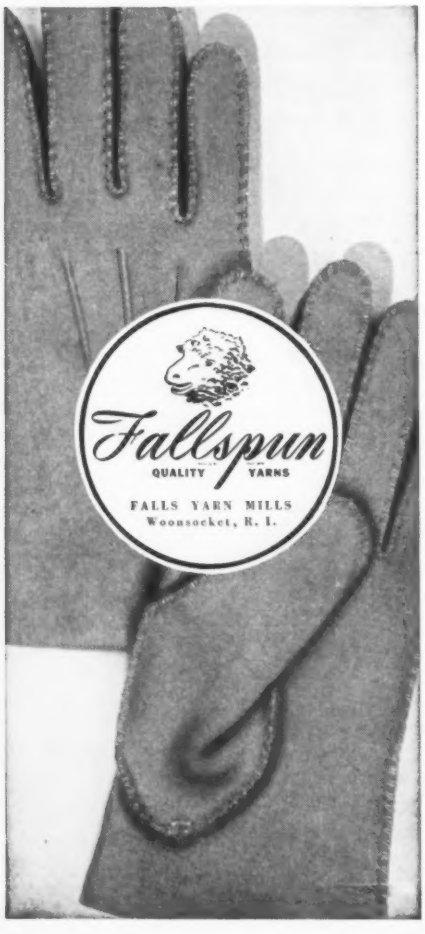

ment corporations, who strikes shall be discharged immediately from his employment; shall forfeit his civil-service status, if any; and shall not be eligible for reemployment for 3 yr. by the United States or any such agency.

VII. Powers of the National Labor Relations Board

The National Labor Relations Board has broad powers to investigate, subpoena records, etc., and apply to the court to punish for contempt.

When the union files a petition with the board alleging that 30% of the employees within a unit (which the union claims is appropriate) desire to authorize that labor organization to make an agreement with the employer requiring membership in such labor organization as a condition of employment in such unit, the board may, if no question of representation exists, take a secret ballot of such employees and shall certify the results thereof to that labor organization and to the employer.

It may order a run-off election in cases where none of the choices on the ballot receives a majority. The ballot must provide for a selection between the two choices receiving the largest and second largest number of valid votes cast in the election.

In determining the appropriate unit, the extent to which employees have organized shall not be controlling.

The board may seek judicial enforcement of its orders or a temporary restraining order prohibiting unfair practices.

No objection to the board's proceeding will be heard by a reviewing court unless it was raised in the proceeding before the board, except where failure or neglect to urge the objection can be excused by extraordinary circumstances.

If a labor organization or its agents seek to force or require any other employer to recognize or bargain with a labor organization or the representative of his employees where the organization has not been certified as the representative of such employees, the board is empowered and directed to hear and determine the dispute out of which such unfair labor practice arose, unless within 10 days after notice that such charge has been fixed, the parties submit to the board satisfactory evidence that they have adjusted or agreed upon a method for the voluntary adjustment of the dispute.

The board may not require reinstatement of an employee who has been suspended or discharged, or the payment to him of back pay, if such individual was suspended or discharged for cause.

When charges are filed with the board that a union is guilty of engaging in a strike or a secondary boycott and NLRB, after a preliminary investigation, has reason to believe they are true, it is required to go to court immediately and seek an injunction or temporary restraining order against the union. In the case of jurisdictional strikes, NLRB is to give the union ten days in which to work out some basis for settlement of their dispute, failing which NLRB itself is to decide the dispute which led to the strike. In addition, strikes or boycotts in these categories are made unlawful, and anyone injured as a result may sue in federal court for damages.

VIII. Powers of the court

After the board has made its findings and issued its order, the affected parties still have the right to ask the Circuit Court of Appeals to review the order of the

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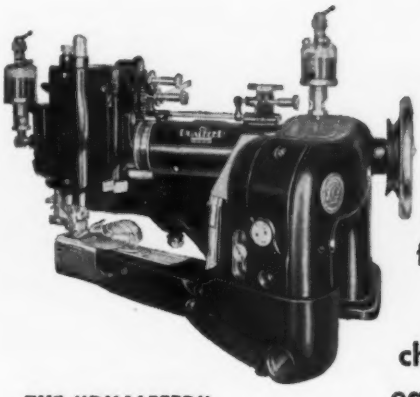

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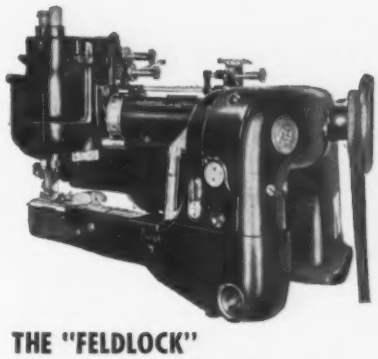
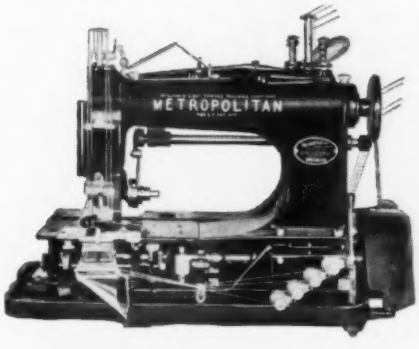
(Semi-Automatic Lubrication)
For lap seam felling of medium and heavy weight fabrics.



THE "FELDLOCK"
(Completely Lubricated)
For lap seam felling of light and medium weight fabrics.



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For overall bib joining and banding.

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that the tiny village of Raphine, Virginia, gave us two inventions that lightened the burden of human labor and brought better living conditions to mankind around the globe?

It was at Raphine in 1831, that Cyrus H. McCormick invented the reaper, a farm implement that has revolutionized grain harvest.

About 20 years later, James E. A. Gibbs came forth from Raphine to invent the "Twisted-loop" or Chain Stitch, giving home and factory the first successful single thread chainstitch sewing machine.

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board. Under the new law, the court has much wider power to review any board rulings.

While the courts will not be required to decide any case de *novo*, that is, weigh the evidence themselves, they will be under a duty to see that the board observes the provisions of the new law to the effect that (a) it does not infer facts that are not supported by evidence or that are not consistent with evidence in the record; (b) it does not concentrate on one element of proof to the exclusion of others without adequate explanation for disregarding or discrediting the evidence that is in conflict with its reported findings.

In actions for unfair labor practices, the proceedings "so far as practicable" are "to be conducted in accordance with the rules of evidence applicable to the District Courts of the United States". Board findings are to be based upon a *preponderance* of evidence rather than on "all the testimony." If upon the preponderance of the evidence taken the board shall not be of the opinion that the person named in the complaint has engaged in or is engaging in any such unfair labor practice, then the board shall state its findings of fact and shall issue an order dismissing the complaint against the person.

IX. Special provision

Communist affiliation is barred from union officers.

The National Labor Relations Board shall not conduct an investigation concerning representation, entertain any petition, or issue a complaint pursuant to a charge made by a labor organization, unless there is on file with the board an affidavit, executed contemporaneously or within the 12-months preceding period by each officer of such labor organization of which it is an affiliate or constituent unit, that he is not a member of the Communist Party or affiliated with such party, and that he does not believe in and is not a member or supporter of any organization that believes in or teaches the overthrow of the United States Government by force or by any illegal or unconstitutional methods. No labor organization shall be eligible for certification nor shall the board issue any complaints pursuant to a charge made by a labor organization, unless the labor union can show that it and any national or international labor organization of which it is an affiliate or constituent have filed the required reports with the Secretary of Labor.

Prosecution of officers who falsely certify they are not communists will be under the Criminal Code (Section 35A).

PRODUCTS & PROCESSES

New Definized Process For Cottons and Rayons

DEFINIZED G; Alrose Chemical Co., Providence, R. I.

A new, wholly-chemical process that makes it possible for the first time to control shrinkage in both rayon and cotton textiles with a single formula is announced by Alrose Chemical Co., Providence, R. I., developers of the process called "Definized G" to differentiate it from the "Definized" process of shrinkage control for rayons only.

The new process is reported equally successful when applied to cottons, rayons, and cotton mixtures with rayons and acetates, regardless of weight or width. The process will be distributed, as is "Definized," by the Aqua-Sec Corp., 1450 Broadway, New York.

Successful commercial runs on thousands of yards of fabrics at several finishing plants are said to show that residual shrinkage on both cotton and rayon or mixtures is restricted to within 1% when the "Definized G" process is used.

These tests have shown also that tensile strength and abrasion resistance of cottons and rayons are unaffected by "Definized G," and the process can be used with equal success on white or dyed goods.

Technically, the process is based on the use of glyoxal combined with newly discovered catalysts that do not discolor the treated fabrics. Chemicals are applied on standard rayon-finishing equipment. The glyoxal solution and the new catalysts are applied on a padder and dried. To complete the reaction, the fabric is then given a "cure" for 3 to 6 min. at temperatures ranging from 270 to 350° F. Next step is to wash, dry, and frame the fabric to a predetermined finished width.

Improved Acetate Dyes Can Be Used on Nylon

INTERCHEM ACETATE DYES; Interchemical Corp., Textile Colors Div., Fair Lawn, N. J.

For dyeing acetate rayon and nylon, Interchemical Corp. developed an improved line of acetate dyes, known as Interchem acetate dyes. Because they are colloidized during manufacture, Interchem acetate dyes paste quickly and thoroughly in warm water with no undispersed particles. As a result, dye specks and redyes are said to be minimized.

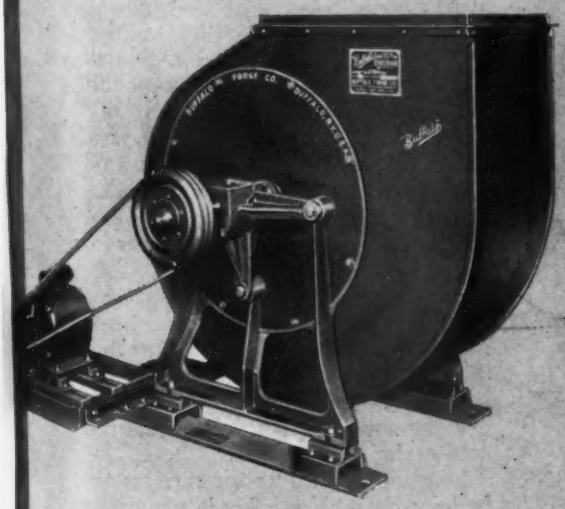
The dyes can be employed for producing either self or compound shades on boxes or on jigs. Some in the line are suitable also for application and/or discharge printing. Dyes in this line

"Buffalo"

"LL" VENTILATING FANS

OFFER THESE ADVANTAGES . . .

"Buffalo" Limit-Load Fan, showing directional inlet vanes on side. Outlet is positioned for horizontal discharge.



Showing Buffalo "LL" Fan in upblast discharge position. Note silent, floating base and effective v-belt drive.

1. Higher Efficiencies Where Elbows Must be Used

Where duct layouts call for curved connections near inlet or outlet of fan, highest efficiencies will be obtained by the use of "Buffalo" Limit-Load Fans. Here, the conoidal design, with correctly shaped blades and scroll housing makes for higher volume air delivery at lower power cost than other types can develop.

2. Non-Overloading Characteristic

There is no danger of overloading a "Buffalo" Fan of this type, and burning out the motor. The housing extends far enough out beyond the scroll development for true cut-off tangent to the wheel.

3. Quiet Performance, Reduced Turbulence

Directional inlet vanes guide air into wheel with marked reduction in turbulence. This, plus vibrationless, perfectly balanced rotors, gives quiet, smooth, efficient running.

4. Sizes, Arrangements to Suit Your Need

Buffalo "LL" Fans are available in a wide variety of capacities, direct or belt-driven, and several arrangements to handle your particular requirements.

For Complete Facts, write us for Bulletin 3339

BUFFALO FORGE COMPANY

184 MORTIMER STREET BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

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now available include: Interchem Acetate Blue B, Interchem Acetate Orange GL, Interchem Acetate Orange 4R, Interchem Acetate Red RN, Interchem Acetate Rubine 3B, Interchem Acetate Bordeaux B, Interchem Acetate Scarlet B, and Interchem Acetate Yellow G. Additional colors are expected to be available in the near future.

Methyl Glyoxal Is Reaching Market

PYRUVIC ALDEHYDE; Carbide & Carbon Chemicals Corp., 30 E. 42nd St., New York 17, N. Y.

Pyruvic aldehyde, or methyl glyoxal, a new chemical, is now available in limited quantities from Carbide & Carbon Chemicals Corp. Larger-scale production is anticipated in the near future, as new uses are established. Pyruvic aldehyde is shipped as an approximately 30% aqueous solution, which is a stable, yellow liquid.

Coating Material Cures Without Shrinking

GEON RESIN 100-X-26; B. F. Goodrich Chemical Co., Rose Bldg., Cleveland 15, Ohio.

A true polyvinyl chloride paste-forming resin, the first of its type to be made in the United States, has been introduced by B. F. Goodrich Chemical Co. Designated Geon resin 100-X-26, this new polymer is a free-flowing white powder with a specific gravity of 1.40. It is easily dispersed in plasticizer with the use of simple processing equipment.

There are two distinct methods for formulating this new resin, and both find typical applications. Both methods of formulation require temperatures of 325 to 350° F. for fusion of resin and plasticizer.

The principal advantages of Geon 100-X-26 resin are ease of processing and the use of conventional equipment.

Using the resin-plasticizer formulating method, the fabricator is said to gain the added advantages of 100% total solids, no shrinkage of mass due to loss of volatiles, and thicker coatings with one dip or pass. Columbus Coated Fabrics Corp., is using the material to produce a coated-fabric table cloth called Plastolyn.

Synthetic Detergent Is Again Available

ARCTIC SYNTEX "M"; Colgate-Palmolive-Peet Co., Jersey City, N. J.

Increased production facilities have made it possible for the Colgate-Palmolive-Peet Co. to reinstate Arctic Syntex "M" beads, soapless detergent, to its industrial list. It is recommended for wool scouring and other textile uses wherever a detergent stable in hard water, mild acid, and neutral in reaction is called for.

Mill Maintenance

Life of Aluminum Parts Prolonged by Soldering

Soldering aluminum parts often can be done economically, provided the proper technique is followed. Because aluminum has great chemical affinity for oxygen, it is a difficult metal to solder successfully, according to information released by Reynolds Metals Co. The aluminum combines with oxygen in the air to form a tough oxide coating on the surface of the aluminum. This coating must be removed and prevented from reforming until the surface of the aluminum has been tinned in order to make a successful solder.

To accomplish this purpose, the soldering flux must be fluid at soldering temperatures and must permit the soldering metal to displace it at the break in the aluminum. The flux also must not react with the aluminum and must be easily removed after the solder has been made.

Cleanliness is an important factor in aluminum soldering. Surfaces must be clean and free of foreign matter, grease, or oil. The flux, of course, must melt at a temperature below the melting point of the solder; and the solder must melt at a temperature below the melting point of the aluminum part.

Scraping or sanding the surfaces to be joined will aid the flux in removing the oxide layer. Straight solders should not be made if the part is to be subjected to much mechanical strain. Strength may be increased by crimping or interlocking the surfaces to be welded. In some instances, it may be practicable to strengthen the solder by riveting or bolting the two pieces together.

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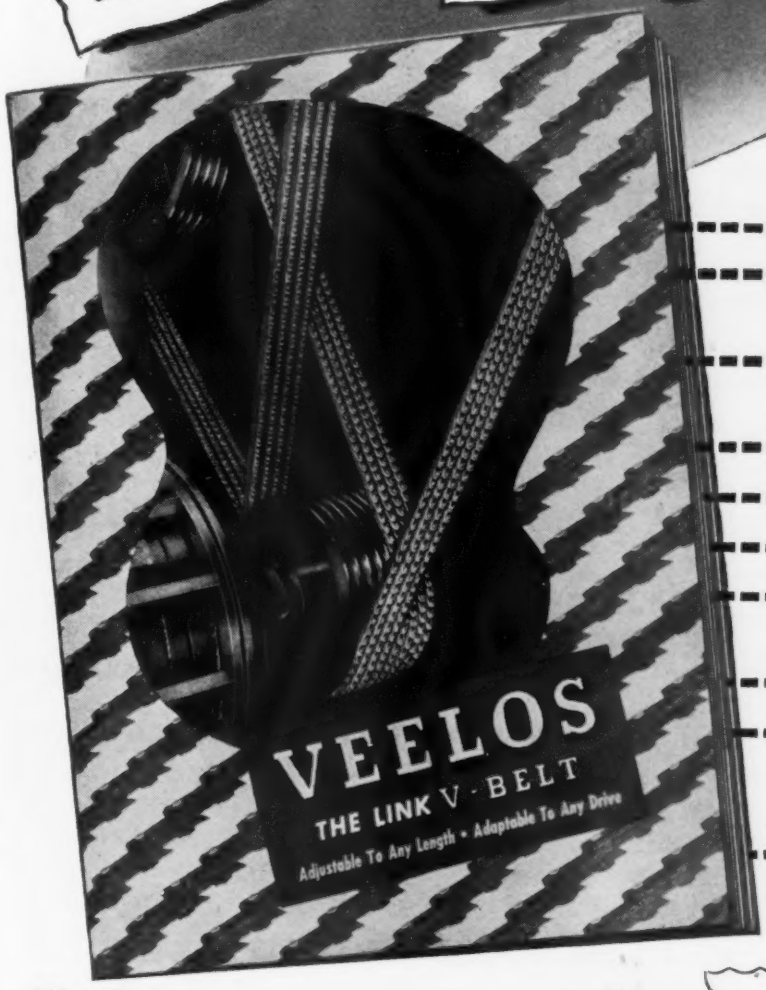
Uniform tension maintained just by removing one or more links. On fixed center drives, slide rails and pivoted motor bases are not needed.



- 14 Important Advantages *(Page 2)*
- Four Reels replace up to 316 Sizes of Endless V-Belts *(Page 3)*
- Two Types Cover All Drive Requirements *(Page 5)*
- Special Applications *(Page 5)*
- Construction *(Page 6)*
- How to Measure *(Pages 7 and 9)*
- How to Couple and Uncouple *(Page 8)*
- How to Install *(Page 9)*
- Engineering Data: Selection and Length Tables, HP Ratings, etc. *(Pages 10 and 11)*
- Installation Photos of Veelos at Work in a Wide Variety of Industries *(Pages 12 to 24)*

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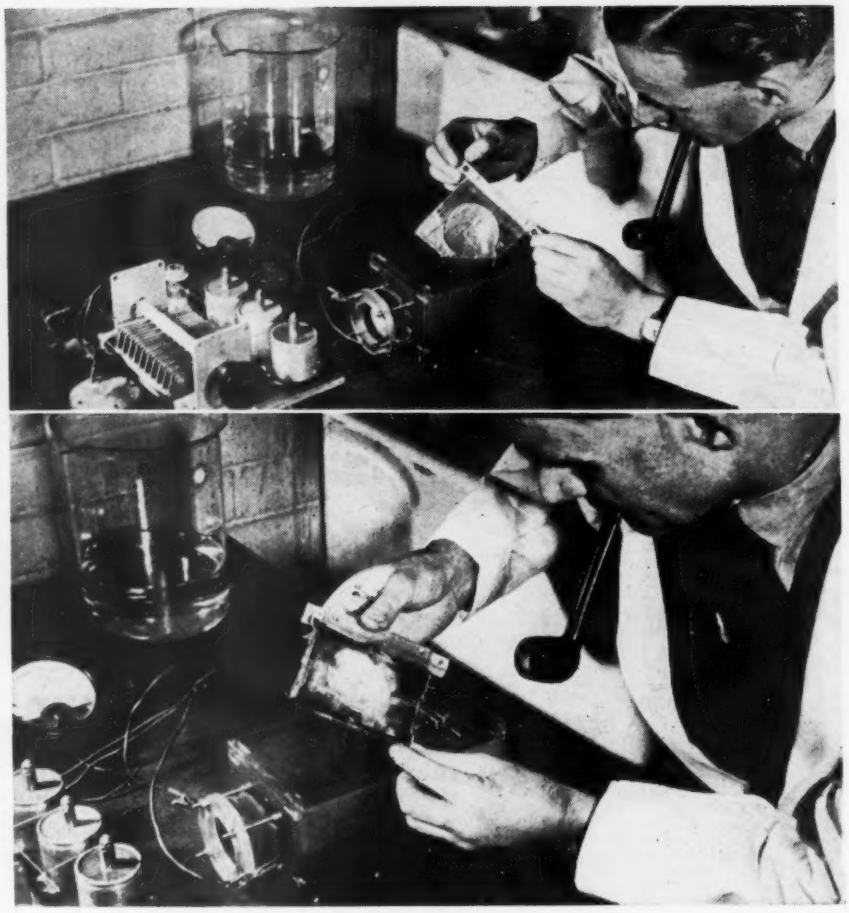

Soiled cloth is inserted in ultrasonics vibrator, above, by John Bold, British scientist. Tests have been carried out at 300 kilocycles and plans are to go to one megacycle. After 10 min. of treatment, the cloth, shown below, is becoming clean.
Photo courtesy British Information Services

ULTRASONICS
Being Used on Textiles

HIGHLIGHTS: *New research tool can be used to combine materials that resist union or to separate unwanted material from cloth—Mills are buying generators—British scientists conduct cleaning experiments.*

ULTRASONICS, a term applied to high-speed vibrations that are above the frequency of audible sound, is becoming associated with textiles, directly as an outgrowth of one of the more important wartime developments.

Ultrasonics can be used to make solutions more stable and thus prevent separation, and might be used to make solutions of materials that formerly were considered incompatible. It is supposed that the high-frequency vibrations cause materials to mix by a mechanical action, although the possibility is great that they cause molecular changes. Several mills have purchased ultrasonic generators for research work; but, so far, no commercially practicable uses have been reported.

One textile research man states that he investigated the possibility of using ultrasonics to develop a system of dyeing wool cloth continuously (but believes simpler pressure mechanisms can be used).

The British are also investigating the possibilities of ultrasonics as applied to textiles. The experimental work pictured on this page has to do with the separation rather than the union of materials.

Ultrasonics should not be confused with supersonics. The latter has to do with movement faster than the speed of sound, such as of an airplane or rocket.

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...you insulate FOR GOOD!

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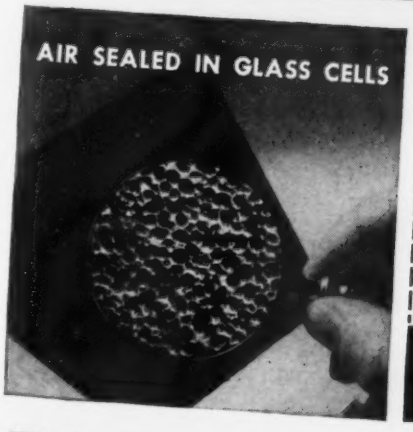
In fact, the elements which so frequently reduce or entirely destroy the insulating efficiency of other insulating materials, are completely powerless to harm PC Foamglas. Foamglas is the one truly permanent insulation . . . for roofs, walls, floors, ceilings of all kinds of buildings. It is the insulation that never grows old. When you insulate with Foamglas, you insulate *for good!*

We invite you to send for complete facts about this amazing material. Just check and mail the convenient coupon. No obligation. Pittsburgh Corning Corporation also makes PC Glass Blocks.



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Textiles Carelessly Defined

FABRICS, by Grace Denny (Sixth edition); J. B. Lippincott Co., Philadelphia; 202 pages, $2.75.

It is hard to understand how a glossary-type book like this can go through six editions since 1923 and retain the inaccuracies, ambiguities, and errors that are to be found with even a quick perusal of its pages. A student of home economics or a sales person in a retail store who absorbs the definitions which this little volume offers gains a high percentage of misinformation and half-truths.

In the fabric-identification section under "sheeting," the weight in the usual construction description is defined as "oz./square yd.—as, for example, 36"-56x60-4.00." It so happens that a 4.00-yard sheeting does weigh 4 oz. to the square yard, but it's the only one that will. Print cloth is not listed at all. In the definition of Textron, though correctly called a trade name, the author says "Different types of rayon and various fabrics are called *textron*." The lower-case "t" is as printed in the book. The convention of printing trade names in italics as generally practiced in this book is a good one, but it is deceptive when not invariably carried out—for example, Resloom on page 131 is not in italics. Some curious origins of names are given for example, "rayon (Fr. 'ray of light')"; "Palm Beach, trade-named fabric first used at Palm Beach for men's suits"; "Canton flannel, so named because first made in Canton, China." The word "Vinyon" is described as "generic."

Under the word "burlap" appears the following: "Sold by weight, e.g. on 40" basis, 24 oz. to one yard." In many of the definitions of particular fabrics, an assumption is evident that such fabric is limited to a few specified widths, usually one. Again under burlap, only two widths are specified—36-in. and 50-in.

A Glen Urquhart plaid is described as a tweed. "Cellulose based yarns" are defined as "twisted paper, resin treated." Under "degumming" is the statement, "viscose rayon is desized after spinning." Combing is described as "process necessary to make worsted yarn . . . . long-staple cotton also combed." For a final touch, "circular knit" is defined—"Fabric or garment in tubular form made on flat or circular machine." And there are many, many more. Also there are many correct definitions. The author may be complimented in correctly defining S and Z twist and avoiding the common error of defining them in terms of right and left.

Since the textile industry is spending millions to disseminate correct information about techniques of manufacture and properties of fibers, it seems regrettable that a volume as misleading as the one under review should have the wide currency which the excellent reputation of its publisher makes likely. The volume could be made into a useful and valuable glossary by a careful editing.

Textile Calculations Are Exemplified

YARN AND CLOTH CALCULATIONS, by Lloyd H. Jackson; Textile Book Publishers, Inc., New York; 198 pages, $6.00.

This is a text and reference book on the subject of textile calculations which covers nearly everything encountered in ordinary manufacturing operations. Yarn-numbering systems are presented, conversion for one system to another described; also resultant counts from plying yarns, gray cloth calculations, warp and filling figuring, fabric analysis, theory of fabric construction, crimp, take-up, production, weights, etc. A detailed index gives the book utility for reference as part of a mill or laboratory library.

For Workers in Figures

SIX-PLACE TABLES, by Edward S. Allen; McGraw-Hill Book Co., 330 W. 42nd St., New York 18, N. Y.; seventh edition; 232 pages, $2.50.

For those dealing much in figures, this compilation of the most frequently used mathematical tables, carried out to six decimal places, will prove valuable. The scope and utility of the tables is best shown by a listing of the major items covered. These are: squares, cubes, square roots, cube roots, fifth roots, fifth powers, circumferences, areas of circles, common logarithms of numbers, common logarithms of trigonometric functions, natural trigonometric functions, radians, degrees, functions of radians, logarithms of factorials, natural logarithms of numbers, integrals, constants, mathematical formulas, etc.

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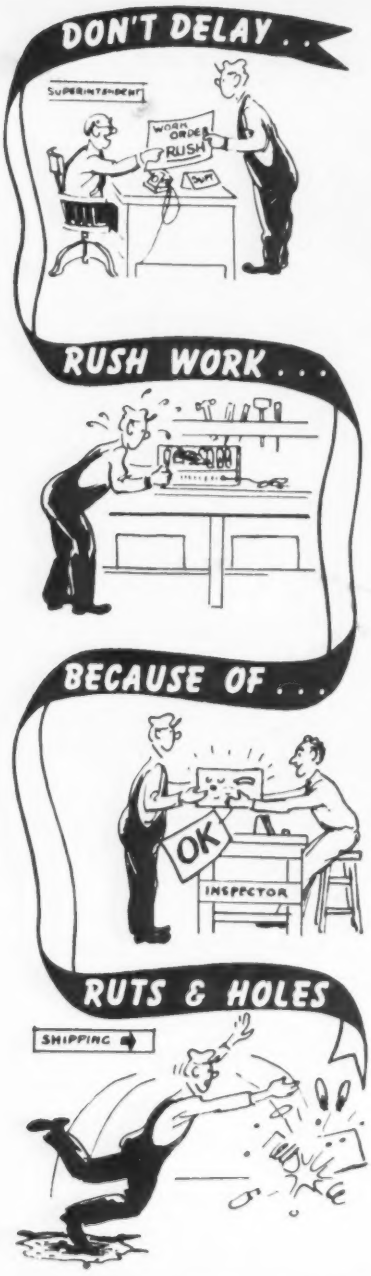

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News of the month

UNDERWEAR'S ANNUAL MEETING. Underwear manufacturers heard authoritative summaries of prospects in the field of fiber and yarn supply and in the field of garment distribution as the feature of their annual meeting in Philadelphia on June 5. Robert Jackson of National Cotton Council spoke for cotton and indicated the bullish factors in the current supply situation. Dr. William P. Jacobs, president of ACMA, told of the cotton yarn and goods situation. Edwin Wilkinson, assistant to the president, NAWM, summarized the wool situation; and Stanley Hunt, of Textile Economics Bureau, did the same for rayon and nylon. Speakers representing the wholesaler, the chain store, the department store, and the fashion press told the manufacturers about the changes in prospect in their fields. Dr. Geo. W. Taylor, former chairman of WLB, said that the No. 1 labor problem currently was the breakdown of discipline. He stressed the point that this and other labor problems must be worked out in the plant. The community of interest with the worker must be emphasized by management, for after all one cannot separate the security of the worker from the security of the company. A. O. Hurxthal, vice president of Proctor & Schwartz, spoke briefly on the Redman fabric shrinking process and Frank Redman also spoke and answered questions. The first machine will be ready to operate this month and most of the performance questions can best be answered after a production record has actually been made. As previously described in these columns, the machine is devised to effect complete relaxation shrinkage. Lyndall Carter, vice president of William Carter Co., Needham Heights, Mass., was elected chairman of the executive committee. Vice chairman were elected as follows: J. Lee Lesher, W. A. Brownlee, James F. Nields, Jr., and A. R. Kneibler. Roy Cheney, president ot the institute, presided.

PROGRESS STRESSED BEFORE S. C. MEN. Citing the impressive gains made by the cotton-textile industry in the last decade in the fields of public relations, labor relations, research, and technology, Dr. C. T. Murchison, president, Cotton-Textile Institute, told the South Carolina

Textile Calendar

AATCC, Philadelphia Section meetings, Sept. 26 and Nov. 8, 1947; Jan. 16, Feb. 27, Apr. 9, and May 21, 1948 (Bellevue-Stratford Hotel, Philadelphia)

AATCC, Northern New England Section meetings, Sept. 26 and Nov. 21, 1947.

National Association of Cotton Manufacturers, 93rd Annual Meeting, Sheraton-Biltmore Hotel, Providence, R. I., Oct. 9 and 10, 1947.

Committee D-13, ASTM, Philadelphia, Oct. 17, 1947.

American Association of Textile Chemists & Colorists, annual convention, Congress Hotel, Chicago, Ill., Oct. 23 to 25, 1947.

Textile Research Institute, annual meeting, Waldorf-Astoria, New York, Nov. 13 to 15, 1947.

International Heating & Ventilating Exposition, Grand Central Palace, New York, Feb. 2 to 6, 1948.

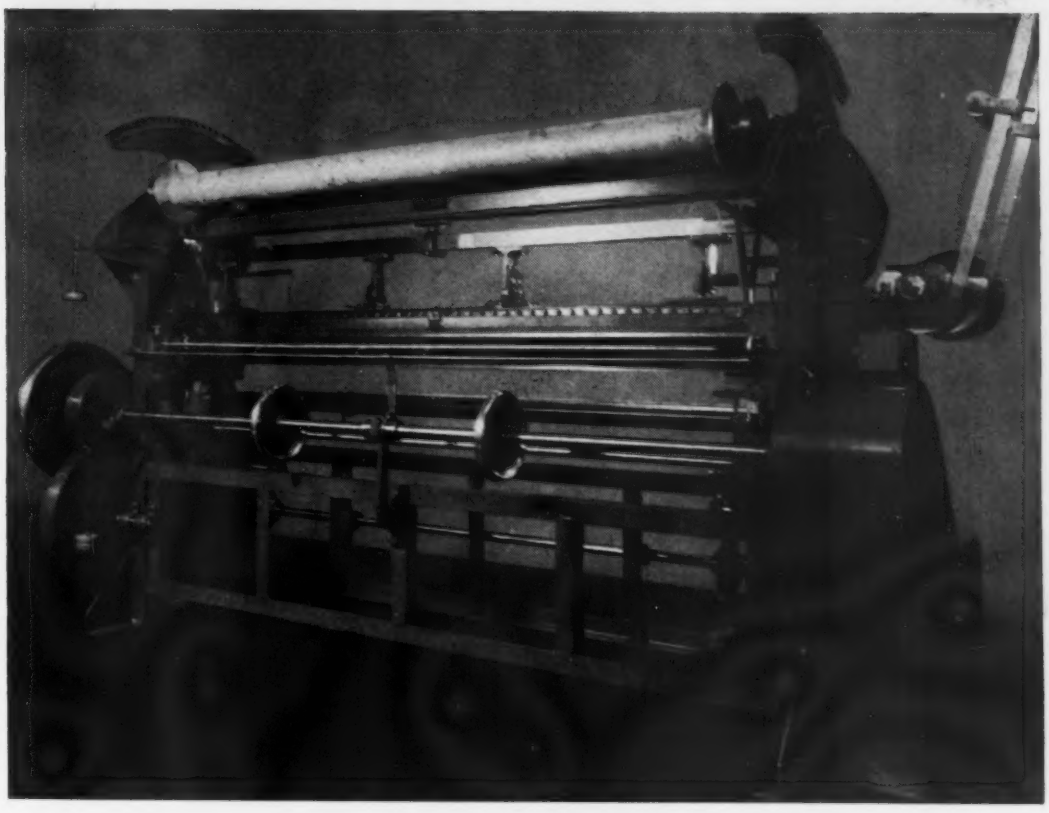
Hosiery Industry Conference and Annual Meeting of NAHM, ,Claridge Hotel, Atlantic City, N. J., April 19a nd 20, 1948.

International Exposition of Textile Machinery, Equipment, & Supplies, 71st Street Armory, New York, April 26 to 30, 1948.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1948.

UNDERWEAR INSTITUTE OFFICERS for 1947-1948 as chosen at the recent annual meeting shown above (left to right) are Vice Chairman J. Lee Lesher, Bestok Underwear Co., Williamstown, Pa.; Chairman Lyndall F. Carter, William Carter Co., Needham Heights, Mass.; President Roy A. Cheney, of Underwear Institute; Treasurer F. R. Devereux, Oneita Knitting Mills, Utica, N. Y.

ROBACZYNSKI ANNOUNCES!



A New 1947 Model

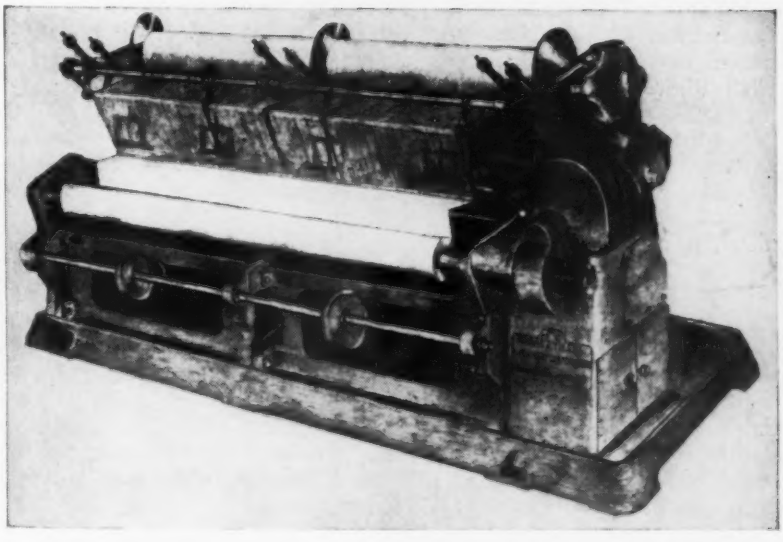
RASCHEL TYPE WARP KNITTER

Built in two types: (1) For hand or power operation. (2) For high speed power operation. Will knit any yarns and produce a large variety of fabrics such as mosquito netting, hair nets, elastic foundation garment fabrics, outerwear, curtain lace, etc.

With fabricated frames and connecting braces, including brace over top of machine supporting the guide bar rod with bearings other than those in the frames. More than 30 years of experience in building flat knitting machinery is your assurance of its ability to withstand high speeds over a long and carefree life.

A New 1947 Model

HIGH SPEED WARP TRICOT MACHINE



At long last a sturdy compact, high speed machine. Capable of continuous operation with chain link or pattern wheel, thus permitting a large variety of patterns with either one or two bars. Correct height for the operator and simple to operate. Handles all fibers in widths of 90" - 168" - 180".

ROBACZYNSKI MACHINES

Purl stitch or Link & Link; Flat Knitting; Border, Tricot; Raschel; Circular String & Belt. Send for information or see them at our plant.

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PHILADELPHIA TEXTILE INSTITUTE FOUNDATION at recent annual meeting in Philadelphia, reelected Col. Millard D. Brown as president. Names of the members at that meeting (left to right) with notations of those elected officers follow: Everett L. Kent, Kent Mfg. Co.; Carl C. Mattmann, Jr., Textron, Inc.; Edward H. Rakestraw, Hyde-Rakestraw Co.; Benjamin Gibbs, Gibbs Underwear Co.; Theodore B. Hayward, Wool Dept., Swift & Co., first vice president; Rinaldo A. Lukens, Continental Mills, Inc.; Millard D. Brown, Continental Mills, Inc., president; Lindsey H. Mason, S & M Dye Works, Inc.; Charles D. Ehrengart, Onyx Oil & Chemical Co.; W. Lyle Holmes, Jr., Archibald Holmes & Son, treasurer; James L. Shields, Charles J. Webb Sons Co. Inc. Not shown are: Emil R. Pohlers, executive director; Russell C. Osborne, secretary; Alban Eavenson, second vice president; Gerome Leonard and Robert A. Smith, members.

Cotton Manufacturers Association at its annual meeting in Charleston, S. C., last month that the industry has long since reached the position where it need not apologize "for any aspects of its operations or philosophy." He pointed out that in the last six years the industry, "without reluctance or opposition on the part of management," has raised its wage levels 170% on a weekly basis, which is considerably more than the average for all manufacturing industries. Also, he added, mills have granted to their employees vacations with pay and social benefits that are becoming standard with major industries. Dr. William P. Jacobs, president of the American Cotton Manufacturers Association, came out strongly against any lending of American money to build up dollar credits in foreign countries, pointing out that "even if other nations have no dollars with which to buy our products, we cannot build a permanent or profitable market by lending or giving them dollars." L. O. Hammett of Anderson was re-elected president and John K. Cauthen of Columbia, executive vice president and secretary-treasurer at the closing business session of the convention. J. B. Harris of Greenwood was named second vice president.

PHILADELPHIA ALUMNI ELECT. Robert A. Smith, of American Viscose Corp., was elected president of the Alumni Association of Philadelphia Textile Institute at the 46th annual "cruise" day, Oreland, Pa., June 6. He succeeds Carl C. Mattmann, Jr., of Textron, Inc. Other association officers elected were Howard P. Galloway, *Laundry Age*, first vice president; Edwin G. Michie, Andrew Y. Michie & Sons, Inc., second vice president; Nelson K. Fite, Krout & Fite Mfg. Co., third vice president; W. Lyle Holmes, Jr., Archibald Holmes & Son, treasurer; Frank L. Giese, Philadelphia Textile Institute, secretary. On the same day, the following officials of the Board of Trustees of the Philadelphia Textile Institute Foundation were elected: Col. Millard D. Brown, Continental Mills, Inc., president; T. B. Hayward, Swift & Co., first vice president; Alban Eavenson, Eavenson & Levering, second vice president; W. Lyle Holmes, Jr., treasurer; and Russell C. Osborne, Rider, Osborne & Devine, Inc., secretary.

CHEMISTS GO WEST FOR ANNUAL. Tentative plans have been announced for the 26th national convention of the American Association of Textile Chemists & Colorists Oct. 23 to 25 at Congress Hotel, Chicago, under the auspices of the Mid-West Section. Features of the program include an all-day technical meeting, presentation of the intersectional contest papers, an open meeting of the research committee, and the annual banquet. The National Technical Program Committee, under the chairmanship of Dr. Miles A. Dahlen, is arranging a general meeting with three technical papers of general interest and six group meetings. The National Intersectional Contest Committee, under chairmanship of Patrick J. Kennedy, has received assurance from seven sections that they will participate in the contest. General chairman of the Mid-West Section is Elmer F. Smith of American Aniline Products, Inc.

HOSIERY MEETINGS IN 1948 AND 1949; KAE IN 1949. The annual meetings of the National Association of Hosiery Manufacturers and of

WILDMAN SUPER FEATURES

1. *Speeds* **Production**
2. **Starts Producing** *At Once*
3. **Takes Finest Gauges** *Perfectly*
4. **Knits** *Complete* **Stocking-Top to Toe**

These four are outstanding among the *many* operational and promotional advantages which the leading hosiery mills throughout the land have experienced in using the

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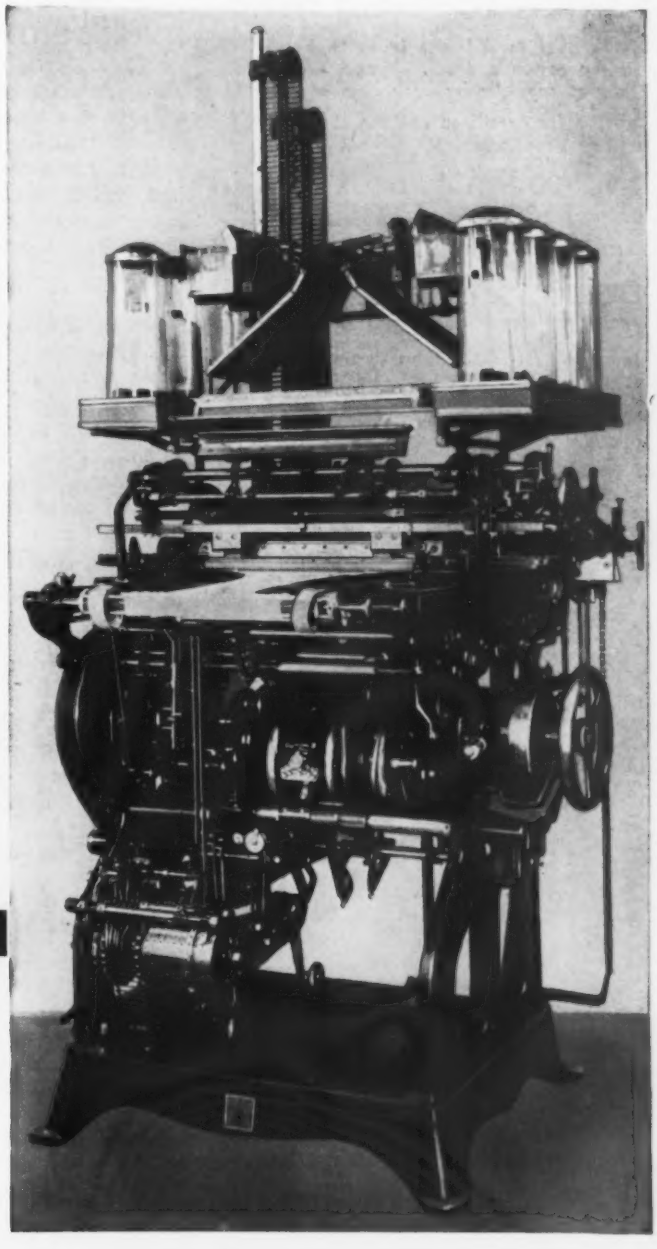
HOSIERY MACHINE

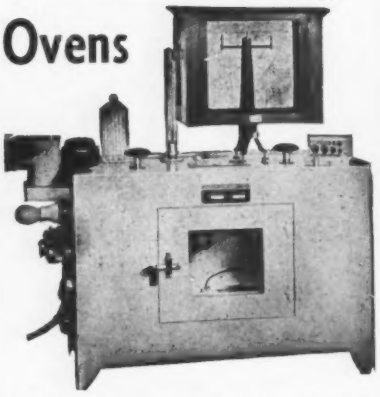
1. Saves time and labor ordinarily wasted in the change-over from leggers to footers.
2. Three hours after the machine reaches your plant it is producing stockings. It is shipped complete, ready to go to work for you.
3. The finer the gauge, the greater its advantages because it is not affected by changes of temperature.
4. Not only saves time and labor but effects economies by eliminating "seconds" due to the bad matching of old-fashioned methods.

May we tell you more of its many superior features?



WILDMAN MFG. CO., Norristown, Pa.

Textile Testing Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼", both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work.

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the Hosiery Industry Conferences for the years 1948 and 1949 are officially set. The association will meet on the morning of Apr. 19, 1948. The conference will start at noon that day and continue through Apr. 20, 1948. In 1949 the annual functions will resemble those of 1947, as they will include the biennial Knitting Arts Exhibition. The association's annual meeting will be held Monday morning, Apr. 25. The Hosiery Industry Conference will run that afternoon and in the morning of Apr. 26, 1949. The Knitting Arts Exhibition will open Tuesday noon, Apr. 26, and will be in session through Friday, Apr. 29, 1949. The meetings will be held again at the Claridge Hotel, Atlantic City. The exhibition in 1949 will be held again in the Atlantic City Auditorium.

FOR SALE OF USED MACHINERY. American Cotton Manufacturers Association, Charlotte, N. C., will act as a clearing house for information regarding the availability of used textile machinery. The association will receive information regarding equipment for sale, and will in turn list such equipment in bulletins issued from time to time.

RAYON PRODUCTION GOING UP. Shipments of rayon yarn and staple in May totaled 78,300,000 lb., an increase of 8% over the corresponding month last year, according to *Rayon Organon*, statistical publication of Textile Economics Bureau, Inc. Shipments for the first five months of the year aggregated 381,800,000 lb., an increase of 8% over the January-to-May period of 1946. With the United States leading the way, world rayon capacity this year will grow to 2,700,000,000 lb., and, if raw materials were available, output could come close to the peak production of all time which was 2,825,395,000 lb. in 1941. It is noted, however, that the actual 1946 world production at 1,671,655,000 lb. represented only 62% of potential capacity.

"SWEATER WEEK" poster, as above, will be used throughout the United States during the second annual national sweater week promotion, scheduled for the week of Sept. 22 to 27 under the sponsorship of the Knitted Outerwear Foundation, 60 East 42nd St., New York 17, N. Y.

JAMES O. THOMAS, assistant to the director of industrial and public relations, Fieldcrest Mills of Marshall Field & Co., Spray, N. C., was appointed executive secretary of the Southern Textile Association, at its annual meeting at Blowing Rock, N. C., June 19 to 21. Mr. Thomas has been active in STA affairs for many years, formerly chairman of the board and an officer of the Northern N. C.-Va. Div. of STA.

LAB TEST FOR TIRE CORD. A new testing machine developed at the Goodyear Research Laboratory, Akron, Ohio, will tell in a few hours, it is said, as much about a new tire fabric as could be learned in a 20,000-mile road-test. The machine can test 20 fabrics simultaneously, and subjects each to the same sort of strain that it would have to endure in an actual tire. To test a fabric with the new machine, it is only necessary to make up a section of a miniature tire about the diameter of a garden hose and about 1 ft. long. Each unit of the flex-tester consists of two revolving spindles, the upper one horizontal, the lower one vertical; their ends are about 9 in. apart. Each end of the miniature tire section or tube to be tested is fastened to one of the two spindles. The tube is thus bent into a 90-degree angle or right angle. Air is now pumped into it under pressure as in an ordinary tire. Then, the spindles are set in rotation. The fabric on the inner curve of the right angle is compressed while that on the outer side of the angle is stretched. This subjects the portion of the tube which is bent to alternate compres-

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WHITIN "comber" Bijur-lubricated

more time for production . . .

. . . because a Bijur-lubricated machine is oiled while running.

One central lubricator force-feeds clean oil thru a single line of tubing to all bearings automatically.

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Metered oil feed reduces bearing wear to help prevent mechanical break-down.

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Cut BALING *time . .*
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JUTE TUBING

The ONLY Baling Cloth with 2-Way Stretch! Fits Packages of All Sizes and Shapes!

Jefco Jute Tubing is a seamless, continuous, tubular baling cloth designed to save time and money in your shipping room. Its unusual elasticity and flexibility provide smooth, close-fitting coverage for a wide variety of sizes and shapes. Its durability and toughness assure maximum protection for your package. Write for details today.

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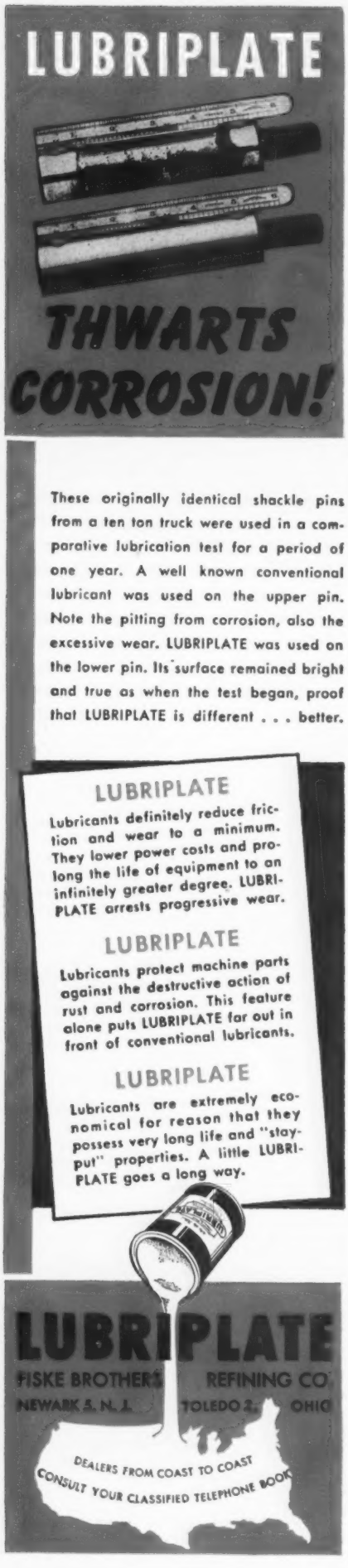
No fitting, no shaping, no time-consuming hand-sewing with Jefco. All you need do is pull up the slack, clamp with wire fastener, and cut.

Jefco's smooth, snug-fitting coverage enhances the appearance of your package, makes friends for your product wherever it goes.


LUBRIPLATE
THWARTS CORROSION!
These originally identical shackle pins from a ten ton truck were used in a comparative lubrication test for a period of one year. A well known conventional lubricant was used on the upper pin. Note the pitting from corrosion, also the excessive wear. LUBRIPLATE was used on the lower pin. Its surface remained bright and true as when the test began, proof that LUBRIPLATE is different . . . better.
LUBRIPLATE
Lubricants definitely reduce friction and wear to a minimum. They lower power costs and prolong the life of equipment to an infinitely greater degree. LUBRIPLATE arrests progressive wear.
LUBRIPLATE
Lubricants protect machine parts against the destructive action of rust and corrosion. This feature alone puts LUBRIPLATE far out in front of conventional lubricants.
LUBRIPLATE
Lubricants are extremely economical for reason that they possess very long life and "stay-put" properties. A little LUBRIPLATE goes a long way.
LUBRIPLATE
FISKE BROTHERS REFINING CO.
NEWARK 5, N. J. TOLEDO 2, OHIO
DEALERS FROM COAST TO COAST
CONSULT YOUR CLASSIFIED TELEPHONE BOOK

sion and stretch that duplicates the stresses endured in a road test. The spindles revolve at any desired speed up to 1,000 rpm. Tests with miniature tire sections made up with cords now in general use showed that they were good for 700,000 to 1,000,000 revolutions on the flex-tester, which is taken as a standard for comparative rating of experimental cords. The flex-tester, does not eliminate road testing, but it makes it unnecessary with every new experimental cord. Cords which break down quickly on the flex-tester can be abandoned at once. Those that show up well on the tester are then given a full-dress road test.

RAYON YARN SALESMEN MEET. Rayon Yarn Peddlers' Association of New England met June 6 at New Bedford Country Club, New Bedford, Mass., and elected the following officers: president, Robert E. Smith, American Viscose Corp.; vice president, Earle D. Taber, Atlantic Rayon Corp.; secretary-treasurer, Earle V. Litchfield, Acetate Div., E. I. du Pont de Nemours & Co.

NEW UNWOVEN RIBBONS. A lamination of Celanese acetate filament yarn with Celanese Lumarith film made by Facil Fabrics Corp., New York, is being offered in ribbon form of various widths for the packaging trades. Color effects can be produced by dyeing the yarn, the Lumarith film, or both. The ribbon has possibilities in the hat-trim and belt fields, and for industrial uses in the realm of electrical insulation.

NEW TEXTILE BUILDING FOR GEORGIA .TECH. The Georgia State Board of Regents has approved construction of an $850,000 textile engineering building at Georgia Tech, Atlanta, as soon as the money is available, after hearing officials of the Georgia Cotton Manufacturers Association declare that present building is inadequate and the equipment outmoded. Charles G. Hertwig, of Macon, and T. M. Forbes, of Atlanta, president and secretary, respectively, of the association, and Frank Williams, of West Point, president of the Textile Educational Foundation, appeared before the regents.

PACIFIC OFFERS WASHABLE WOOL GOODS. Pacific Mills Worsted Div. has developed in its research laboratories at Lawrence, Mass., a new process, called Pacifixed, for making wool fabrics washable by holding shrinkage to less than 2%.

NEW FELT-BACKED CARPET. Bigelow-Sanford Carpet Co. is offering a new construction of wool-faced rug first shown at the furniture market opening in New York on June 23. The face is all new wool applied to a punched felt backing. Two patterns in tan, blue, rose, and green are offered. The rug will sell in the low-price range, the 9x12 size at $24.95.

FULL-FASHIONED WAGE INCREASE. The American Federation of Hosiery Workers, CIO, and the Full-Fashioned Hosiery Manufacturers of America, Inc., signed a renewal of their two-year contract which expires Aug. 31 and arranged a 13¢ hourly wage increase effective June 23. This wage advance will bring average hourly earnings to the highest peak in history at $1.50.

LOWELL AWARDS DEGREES. Forty-eight degrees, including 15 Master of Science awards in textile chemistry and engineering, were granted to students at the 49th commencement of Lowell Textile Institute on June 2. The achievement medal of NACM was won by Julian F. Kosowicz, of Lowell, a textile engineering department graduate. Dr. Milton Harris was the commencement speaker. Two new scholarships will be provided next year and in subsequent years at Lowell by Chicopee Mfg. Corp. according to a joint announcement by President Fox of the institute and G. O. Lienhard, president of Chicopee.

COURSE ON RESEARCH. Massachusetts Institute of Technology, Cambridge, Mass., offers a 4-week summer course in principles of textile research beginning Aug. 4 under the direction of Prof. E. R. Schwarz.

MATTHES FOUNDATION AWARDS. Three Latin-American students who have been awarded Matthes Foundation scholarships at Carnegie Tech for 1947-48 are: Miss Sonny Jimenez-Arbelaez, of Medellin, Colombia, a graduate in civil and mining engineering; Enrique Palao, of Lima, Peru, a graduate in mechanical engineering; Jose R. Esclusa of Caracas, Venezuela. Albert J. Matthes, head of Machinery Liquidating Co., New York, is sponsor.

MARTEX SCHOLARSHIP TO PTI. The Textile Scholarship Foundation of Clifton, N. J., sponsored by Martex Print & Dye Works, Inc., accepted applications through June 15 for its 1947-48 textile scholarship award for the Philadelphia Textile Institute.

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better, more efficient, lower cost finishing for your

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For over thirty-seven years Laurel has met successfully myriad challenges of leading dyers, bleachers and finishers with better, more efficient processing agents. Ask Laurel Technicians for their recommendations.

Laurel Boil-Off Oils and Compounds · Laurel Emulsions and Softeners · Laurel Hosiery Finishes · Laurel Nylon Finishes · Laurel Rayon Oils · Laurel Textile Oil · Laurel Wool Oils · Laurel Special Finishes

soaps, oils, finishes

LAUREL SOAP MANUFACTURING CO., Inc.

Wm. H. Bertolet's Sons

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CARBOMATIC INFRA-RED DRYERS

for tenters and palmers are engineered to provide complete, *uniform* drying (this applies also to selvage) without need of any housing whatever.

Mills often double their production by use of CARBOMATIC equipped tenters and palmers—not only getting a better drying job but obtaining a faster dye as well.

Why encumber your factory space with metal housing which does not facilitate drying but simply absorbs heat? Modern buildings in many industries are now being equipped especially for infra-red heating—eliminating the old-fashioned use of radiators, which first heat the air and all other objects in the room but which impart no direct infra-red heat to the material in process. Similar conditions hold true in your industry. Your purpose should be to dry and cure your materials in process, without wasting heat on the surroundings.

With the perfected CARBOMATIC-engineered method, you can avoid several handlings of materials—can secure a direct, complete drying in one operation.

Write for descriptive Bulletin TW-7.

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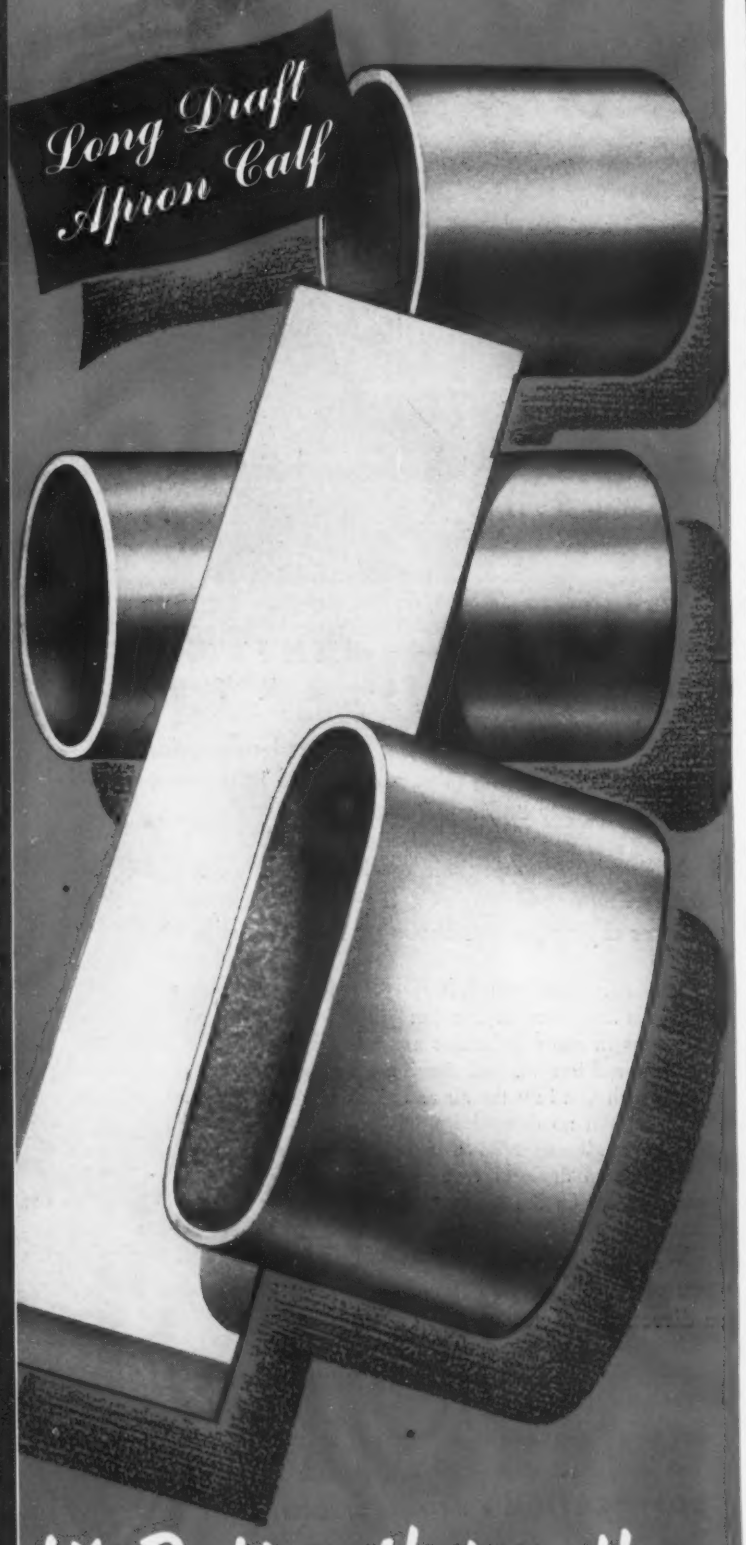
IF IT'S INFRA-RED — BE SURE IT'S

IN CANADA
Canadian Textile Engrg. Ltd.
980 St. Antoine St., Montreal

FIRST CHOICE IN APRON LEATHERS

LAWRENCE



It's Better Naturally

THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN

A. C. Lawrence Leather Company, Peabody, Mass. Manufacturers of Lawrence Spinna Calf—top name in roll coverings. Represented by H. H. Hersey, Greenville, S. C.

A. C. LAWRENCE LEATHER CO. TEXTILE LEATHERS PEABODY MASS.

NEWS ABOUT Suppliers

H & B American Machine Co., Pawtucket, R. I., has contracted with the Machinery Manufacturers' Corp., Ltd., Bombay, India, to furnish the latter with designs, specifications, and technical assistance by which the Rhode Island company's product will be built in India. The development of the cotton-textile machinery market in India is a major objective. The agreement was signed by Louis C. Edgar, president of the H & B company, and Kailash C. Mahindra, head of the Bombay company. Mr. Mahindra stated that India has 10.5 million spindles, and the field for expansion is great; until now, most of the Indian machinery has been imported from England. Mr. Mahindra said that he came to America because of his opinion that American machinery is superior. It is planned to establish a machinery plant in the vicinity of Calcutta, and it is expected that the first machinery will be produced about 2 yr. from now. Meanwhile, the Indian concern will act as exclusive selling agent for H & B in India. The Indian corporation is an outgrowth of the Mahindra & Mohammed Co., of which Mr. Mahindra is chairman and which was organized postwar to promote the general industrial welfare of India. John Inglis Co., Ltd., Toronto, Canada, has been named technical consultant for the Indian company in the design and erection of the Calcutta plant. Mr. Mahindra served for three years during World War II as head of the Indian supply mission at Washington. He is chairman of Turner-Hall & Co., Ltd., and director of Rayons, Ltd., Bombay.

Oscar Kohorn & Co., New York—Oscar Kohorn, president of this company, is making a trip through European and Scandinavian countries during June and July to conduct negotiations regarding the machines which his firm manufactures in the United States for high-tenacity rayon, staple fiber, and cellophane.

Walker Mfg. Co., Philadelphia, has appointed Belton C. Plowden, of Griffin, Ga., as agent to cover Georgia, Alabama, Mississippi, Louisiana, Tennessee (except eastern part), and Kentucky. Mr. Plowden represents other manufacturers of textile-mill equipment and accessories, and has been in this field for 25 yr.

Stein, Hall & Co., Inc., New York, has appointed Kenneth Arnold as manager of the Chicago sales branch office. He has been with Stein, Hall & Co., since 1933 and for the last 12 mo. has been assistant manager of the Chicago office. Oscar Westerlund, who has been with the company for many years in Chicago, will continue as assistant manager of the Chicago branch.

American Viscose Corp., New York, has named Arthur S. Cookman, Jr., as assistant district sales manager at Charlotte, N. C. He succeeds Henry K. Kelly, who was promoted to manager to succeed Harry L. Dalton soon after Mr.

HOWARD J. HEFFERNAN, assistant general sales manager of Monsanto Chemical Co's. Merrimac Div., at Boston, Mass., has been appointed the division general sales manager to succeed Dr. Lester A. Pratt, who became assistant to the division general manager on May 16. Mr. Heffernan joined Merrimac Chemical Co. in 1926 as a salesman in the New York area. He became New York branch manager in 1929 when Merrimac became part of Monsanto. He was transferred to Everett in 1945 on his appointment as assistant general sales manager.

Dalton was named public relations director of the corporation. Mr. Cookman has been with American Viscose for 5 yr. in the Charlotte office.

Mixing Equipment Co., Rochester, N. Y., has appointed the Maleson Co., of Philadelphia, to take over the territory formerly handled by J. E. Snyder, who has retired. In addition, Maleson engineers will cover the southern section of New Jersey, all of Delaware, the major portion of Maryland, and Eastern-Central Pennsylvania formerly contacted by the New York office of Mixing Equipment Co. through Glenn J. Moorhead, Eastern Div. sales manager.

Interchemical Corp., Textile Colors Div., Fair Lawn, N. J., has elected Laurence G. Meads as divisional chairman, and Norman S. Cassel as divisional president, responsible for the general management of the Textile Colors Div. William B. DePass, formerly district manager of the Southern district, has been appointed sales manager of Aridye pigment colors and clears. Fred Baumann is in charge of sales of Interchem dyes.

Rumford Chemical Works, Rumford, R. I., has appointed Robert P. Beaven to its technical service staff. He has a BS degree in chemistry from Rhode Island State College and has taken special instruction at Lowell Textile Institute.

H. C. KNISEY, formerly vice-president, has been named president of Cameron Machine Co., Brooklyn, N. Y. to succeed W. B. Wilshusen, who has been with the company 32 yr. and has been president since the death of the founder, James A. Cameron, in 1933. Mr. Wilshusen will continue his association with the company as state representative in California where he will make his home. The Cameron company has elected as vice-president A. Stirba, Sr., works manager and a director for 25 yr. R. W. Cummings, service manager for 18 yr., is secretary.

SOUTHERN TEXTILE SHOW SET FOR FALL OF NEXT YEAR

SOUTHERN TEXTILE EXPOSITION has been scheduled for the week of Oct. 4 to 9, 1948, at Textile Hall, Greenville, S. C. The management states that widespread interest is being shown in the exhibition. The prospectus will be issued within the next few months. This will be the fifteenth in the series of Southern textile expositions.

American Key Products, Inc., New York, has appointed Ira L. Griffin, Box 1576, Charlotte, N. C., as its exclusive Southern representative to handle its starch, dextrines, and related products. Mr. Griffin was previously for 25 yr. Southern division manager of Stein, Hall & Co. American Key Products, Inc., will establish in Charlotte storage and laboratory facilities. Ira L. Griffin, Jr., will be associated with his father. Since release from the Navy, he has been with a textile-finishing company.

Minneapolis - Honeywell Regulator Co., Minneapolis, has moved its Chicago regional office to larger quarters at 351 East Ohio St. James H. Binger has been elected assistant vice president of Minneapolis-Honeywell. He was previously assistant secretary. Minneapolis - Honeywell has formed a subsidiary company in Mexico, which is the sixth foreign subsidiary so organized. The new firm has been named Honeywell-Brown, S. A., with offices in Mexico City. In addition to the new subsidiary, Honeywell also operates companies in England, Belgium, The Netherlands, Sweden, and Canada.

Pennsylvania Salt Mfg. Co., Philadelphia, has tentative plans for an expansion program costing approximately $7,500,000 to be financed in part by an increase in the capital stock of the company. The company has appointed Francis E. Murphy and Henry G. Meyer as assistant production managers. Pennsylvania Salt

TOP NAME IN ROLL COVERINGS
LAWRENCE
Spinna Calf
It's Better Naturally
THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN
A. C. Lawrence Leather Company, Peabody, Mass. Manufacturers of Lawrence Calfskins — 1st choice for aprons. Represented by H. H. Horsey, Greenville, S. C.
A. C. LAWRENCE LEATHER CO.
TEXTILE LEATHERS
PEABODY MASS.

Clean by Hand? Why Not?

Might be better. Rigged with ParksTurbo Traveling Cleaners, frames are blown off every three or four minutes.

Lint and fly are blown away before they have a chance to collect and to be spun into the yarn.

Hand cleaning, done as often or as regularly, might be better. But what spinner would want to fan a bunch of frames by hand fifteen or twenty times an hour? Or who would want her to?

ParksTurbo Traveling Cleaners take the drudgery out of spinners' work—and earn their keep besides.

Parks-Cramer Company

Fitchburg, Mass. **Charlotte, N. C.**

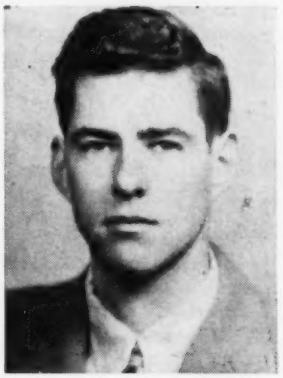
ParksTurbo Traveling Cleaners cost nothing. Pay for themselves so soon.

has appointed Joseph J. Duffy, Jr., as manager of sales of its Special Chemicals Div. He was formerly assistant manager of sales in the division and succeeds William P. Drake, recently appointed assistant vice president. The company has assigned William R. Page and Gilman R. Hedrick to the field staffs of Los Angeles and Denver territories, respectively.

Monsanto Chemical Co., St. Louis, Mo., has named as its executive vice president, Dr. Charles Allen Thomas, previously vice president and technical director. Felix N. Williams, of Springfield, vice president and general manager of the company's Plastics Div., was elected to the board of directors. Josiah B. Rutter, of Everett, Mass., general manager of the company's Merrimac Div., was elected vice president. James A. Wilson, formerly plant manager for Monsanto at Trenton, Mich., is now plant manager at Everett. John S. Hayes, recently Monsanto project manager of the general engineering department's activities at Oak Ridge, Tenn., is division engineer for Merrimac Div. at Everett. Arthur L. Gardner, production manager of the Merrimac Div., has been appointed to be assistant division general manager.

Nopco Chemical Co., Harrison, N. J., has appointed George E. Motz as a sales representative for its Industrial Div. His territory includes Alabama, Mississippi, Louisiana, western Tennessee, and Arkansas. Nopco, which this year observes its 40th anniversary, has initiated 18 new members into its 15-year club. Membership in the club now totals 119, or over 10% of the total employees.

E. HAYS REYNOLDS, a recent graduate of Clemson, has been appointed sales-service man in the Greenville, S. C., area by Keever Starch Co., Columbus, Ohio. At the same time, Charles G. Switzer was promoted to position of manager of the Keever Textile Sales Div., which has its headquarters at 1200 Woodside Bldg., Greenville. Mr. Switzer, who has represented Keever in Greenville since 1940, fills the vacancy created by the death of Claude B. Iler, who was with the company for 25 yr.



***PHILIP E. MACLEAN** has been appointed by Onyx Oil & Chemical Co., Jersey City, N. J., as technical representative in the New England area. Mr. MacLean is a graduate of Lowell Textile Institute, with over 3 yr. of overseas service with the Navy. He had previous experience in textiles, with particular reference to resins and their application in emulsion form. After time at the Onyx plant, he will assume his duties in New England textile field about Aug. 1.*

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed J. L. Singleton vice president and director of sales for its general machinery division.

Link-Belt Co., Chicago, has re-established a sales office in Washington, D. C., in the Washington Gas Light Bldg., with C. R. ("Pete") Heller, Washington representative, in charge. Link-belt has appointed Robert C. Becherer to be plant manager of the Ewart plant in Indianapolis where the company's conveyor and drive chains are made.

Hooker Electrochemical Co., Niagara Falls, N. Y., has appointed Horace W. Hooker, Jr., as purchasing agent. Mr. Hooker has been with the company since 1934 and for the last 6 yr. has been assistant purchasing agent.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has acquired the business of Forbes Varnish Co., Cleveland, Ohio, which will continue operations as the

TEXTILE MILLS
agree with
PAPER MILLS
on choice of the best methods for
HEATING • VENTILATING
SATURATING • CURING • DRYING

Section of ROSS Ceiling Heating and Ventilating System in mill of Trion Co., Trion, Ga.

The time tested success of the many ROSS Air Systems throughout the pulp and paper industry naturally led to their application in the Textile Industry. Leading textile manufacturers were quick to fully utilize the expert knowledge and broad experience possessed by ROSS engineers in the field of air handling. In two major industries with basic processing problems so much alike, ROSS methods can be relied upon for equally successful results.

Dye House Ventilation, Continuous Web Drying, Web Saturating and Coating, Infra-Red Drying—Gas and Electric, Oil and Gas Fired Air Heaters. Consult us on your problems.

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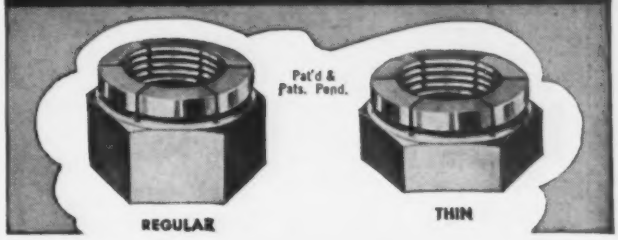
FLEXLOC



SELF-LOCKING NUTS

Free samples of our "Flexloc" Self - Locking Nuts — "Draper" or American Hex Standards—are yours for the asking.

"Flexloc" packs maximum usefulness in minimum space because it is rugged, self-locking, compact —and is therefore becoming increasingly popular and this applies alike to U.S.S. and S.A.E. thread series.

Every thread — including the locking threads — takes its share of the load.

Covers a wide range of tolerances—from low #1 to high #3. Can be used over and over again without losing much of its locking ability.

Being a "stop" nut, it stays locked in any position on a threaded member.

"Flexloc" Thin Nuts are especially popular, because their tensile is so high.

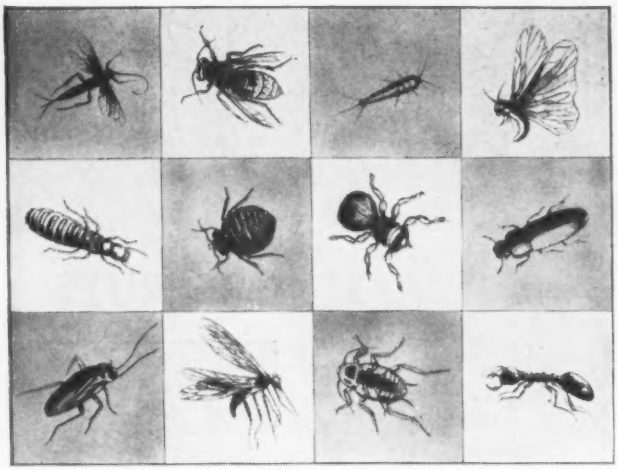
Sizes from #6 to 1" in diameter — MILLIONS IN USE. Can be made of all commercial metals such as Steel, Stainless Steel, Brass, Bronze, etc. Some of the largest mills have found them to cut maintenance radically.

Convince yourself with a few free samples

OVER 44 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.
JENKINTOWN, PA. BOX 571
BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

PICK the PESTS

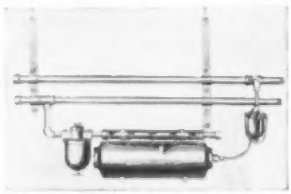


...you'd like to give the "AIR" Forever!

Do your special insect pests crawl or fly? Thrive on Food or Fabric? Run rampant in a midget-sized cubicle or nest in the hard-to-reach places of a tremendous factory? Get rid of them with the West Atomizer —an effective scientific method of insect control. Designed to eliminate all pests *wholesale* with a fast "positive-kill."

A permanent installation which shortly pays for itself in time and labor saved (plus the tremendous advantage of complete coverage) the West Atomizer is perfected for efficient and effective use with compressed air. Just turn on the air valve and it *shoots out* a deadly fog of insecticide which reaches into the tiniest cracks and crevices. *Does its lethal magic as quickly in a mile-long plant as in a small store room.* Dispenses a "dry" mist so it won't wet floors, walls, or product if used as directed.

With the West Atomizer, use Vaposector Fluid—one of West's complete line of effective insecticides, specially prepared to help lick your insect problem. Vaposector is a concentrated, odorless insecticide—and is safe to use. Why not consult one of over 475 trained West representatives at once?



Products That Promote Sanitation

WEST DISINFECTING Company

42-16 WEST STREET
LONG ISLAND CITY 1, N. Y.

★BRANCHES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

CLEANSING DISINFECTANTS - INSECTICIDES - ROTEX VENDING MACHINES
PAPER TOWELS - AUTOMATIC DEODORIZING APPLIANCES - LIQUID SOAPS

NEWS ABOUT SUPPLIERS

Forbes Finishes Div. of Pittsburgh Plate Glass Co. Paul R. Croll has been named assistant to the vice president of Pittsburgh Plate Glass Co. in charge of the paint division. In addition, he will have overall responsibility for manufacturing operations of the various branches of the division.

Graton & Knight Co., Worcester, Mass., has organized the Dixie Leather Corp., a subsidiary, to own and operate a new 1,000-hides-a-day tannery on the Flint river at Albany, Ga.

General Electric Co., Schenectady, N. Y.—H. W. Rogers has relinquished his responsibilities as engineer of the Paper & Textile Div. of the Apparatus Dept., to become engineering consultant in the division with special duties. G. W. Knapp, formerly engineer of Rubber & Printing Div., succeeds Mr. Rogers, while C. E. Miller, engineer in the Rubber & Printing Div., succeeds Mr. Knapp. General Electric Co. has begun operations in its new plant at Anaheim, Calif., for the manufacture of Glyptal alkyd resins.

New York & New Jersey Lubricant Co., New York, has appointed Donald Beaman, a veteran of 6 yr. in the Marine Corps, to its sales and engineering department as Non-Fluid Oil sales and service representative for the western part of Massachusetts and eastern Connecticut.

Cotton Yarns Co., New York, has appointed Roland Swallow, who has been in the cotton yarn business for 30 yr., to cover Pennsylvania and adjoining territories.

American Gas Association, New York, is promoting the industrial and commercial gas slogan—"More and More the Trend Is to Gas."

Joseph T. Ryerson & Son, Inc., Chicago, has appointed William G. Findlay as manager of its Pittsburgh plant, succeeding Howard L. Robinson who has been given a special assignment at the Cleveland plant of the company. About 4,000 persons attended the open house hold May 15 at the new Los Angeles plant of Joseph T. Ryerson & Son, Inc., steel distributors. Hosts were F. A. Purdy, plant manager, and T. L. Kishbaugh, assistant manager.

W. H. KIRKPATRICK has been appointed manager of the new office at 805 Woodside Bldg., Greenville, S. C., just opened by E. F. Drew & Co., Inc., New York, N. Y., and Boonton, N. J. This office will serve the Southeast with Drew's textile specialties and allied products. Warehouse stocks will be kept in a central location. Mr. Kirkpatrick was formerly with Westvaco Chlorine Products as divisional sales manager.

Aluminum Co. of America, Pittsburgh, Pa.—George J. Stanley, director, vice president, and general sales manager, retired as vice president and general sales manager on July 1. Ralph V. Davies, Robert B. McKee, and Donovan Wilmot, assistant general sales managers for Aluminum Co. of America, have been promoted to vice presidents of the company. Mr. Davies will also become general sales manager for Alcoa, succeeding George J. Stanley in that capacity.

Commercial Solvents Corp., New York, has opened a district sales office in Los Angeles, Calif., with Edward B. Driscoll, formerly with the San Francisco office, as manager.

Oronite Chemical Co., Richmond, Calif., has brought the production of its new $3,500,000 synthetic detergent plant to its initial-design capacity of 100,000,000 lb. of primary product annually.

A. E. Staley Mfg. Co., Decatur, Ill., has appointed Lowell O. Gill as assistant technical director and Dr. Paul R. Shildneck as director of research.

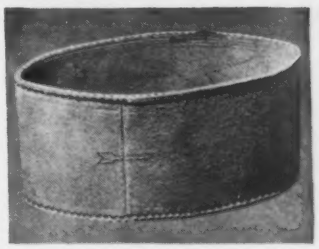
Lukens Steel Co., Coatesville, Pa., has appointed W. E. Mullestein as manager of field sales for the parent company and subsidiaries, By-Products Steel Corp. and Lukenweld, Inc. He succeeds Arthur J. O'Leary, who died recently.

Barnes gives you 3 CHOICES OF RUB APRONS

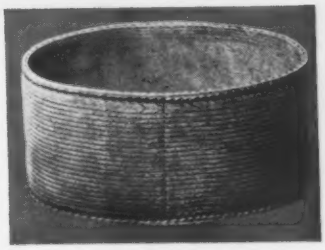
Each the BEST *for its job!*

10 REASONS FOR SUPERIORITY—

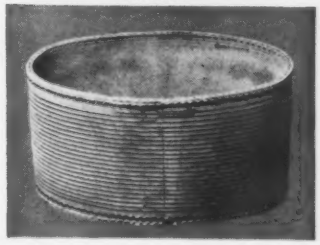
1. Control Starts in our tannery.
2. Premium paid for foreign and domestic hides free of imperfections which pull up wool.
3. Ten tannages, the result of years of experience. Our better-known brands are: Mineral Tan (Chrome), Gam-Oil (Gambier), Brown Mineral Tan (Chrome Retan), Barnes Oak, Cham-I-Tan (Special), and Finisham (special).
4. Each process chemically controlled by competent chemists.
5. Minimum stretch because hides are prestretched in controlled drying chamber.
6. Aprons hand processed by skilled workmen.
7. Even thickness throughout; only most selective hide area used.
8. Manufactured to run straight.
9. Specially processed, waterproof lap. Strong, flexible; even thickness overall.
10. Aprons seasoned before shipping.



Finisham (Plain)
Soft Special tan, white



Gam-Oil (Plain or Grooved
Semi-firm



Oak Tan (Grooved)
Firm

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES Tanners and Manufacturers — THE Textile Leather HOUSE (SINCE 1876)

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

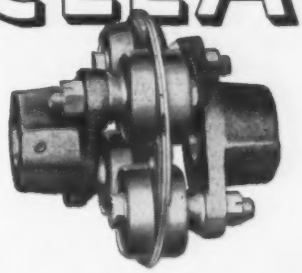
WHEN IS ONE MULE 13 TIMES Better?

WHEN IT'S A JOHNSON AND BASSETT MULE, WHICH HAS 13 ADVANTAGES OVER RING SPINNING FRAMES AS FOLLOWS: **1.** Up to 50% saving in labor. **2.** Up to 65% saving in H.P. per equal number of spindles. **3.** Up to 50% saving in floor space per equal number of spindles. **4.** Up to 67% saving in investment per comparable capacity. **5.** The J & B Mule will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%. **6.** The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning. **7.** It permits inspection of the thread. **8.** It will successfully spin short staple roving which will not hold together on a frame. **9.** Spindle for spindle, it will produce as much yarn as a frame. **10.** Its cost of upkeep is exceptionally low. **11.** The J & B filling package does not require rewinding for an automatic loom. **12.** Changes for spinning different types of yarn on the J & B Mule are easily and quickly made. **13.** Mule bobbins cost less than frame bobbins.

Complete details and prices on request.

JOHNSON & BASSETT, INC.
Founded 1865
WORCESTER, MASSACHUSETTS, U. S. A.

QUIET... CLEAN



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Special Morse-designed resilient Neoprene biscuit assembly isolates vibration, protects machine installations. No metal-to-metal contact; insulated against noise and electricity. No lubrication required—can't soil products. Send for further information.

MORSE CHAIN CO. • Detroit 8, Mich. • Ithaca, N. Y.
A Borg-Warner Industry

MORSE MECHANICAL POWER TRANSMISSION PRODUCTS

DAMP-TEX
ENAMEL
FOR WET
EQUIPMENT
and WALLS
FRIEND
OF THE PLANT
OWNER... WHO HAS
A WET SURFACE
MAINTENANCE PROBLEM
The Damp-Tex system of painting kills rust, rot, fungus and bacteria. Stops deterioration. Can be applied on any paintable surface, wet or dry, with equal ease and efficiency... changing dingy, rough light-blotter interiors into glistening porcelain-like beauty. One coat covers. Resists acid, alkali, corrosive gases and oxidation. Dries overnight without flavor-tainting odor into waterproof film. Comes in white and colors.
Write for our trial offer.
LIQUID PORCELAIN-LIKE
DAMP-TEX FOR
WET
OR DRY
SURFACES
STEELCOTE MFG. CO. • ST. LOUIS, MO.
Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

NEWS ABOUT Mills

Cotton Mill News

Amer-Ind, Inc., Meridian, Miss., has shipped 16 carloads of textile equipment to Brazil. Closed as a result of sale of equipment, the mill was formerly operated as Southern Cotton Co.

Aldora Mills, Barnesville, Ga., plans for a $90,000 school construction program.

American Thread Co., New York, N. Y., has begun superstructure for a new addition to its plant at Bristol, Tenn. Estimated cost over $100,000 with equipment. At Clover, S. C., the company is renovating and enlarging both mill and village.

Anchor Rome Mills, Rome, Ga., plans a $100,000 mill addition.

Bates Mfg. Co., Lewiston, Me., is erecting a single-unit power plant to furnish steam and power to its Androscoggin Div., Hill Div. and the Bates plant itself. The plant will be built at the Bates Div. with high pressure steam lines running to Androscoggin and Hill. The side track and coal trestle will also be at Bates. The installation will include Babcock & Wilcox water-tube boilers and Westinghouse stokers. It is estimated that it will make a saving of $65,000 a year.

Bath Mills, Bath, S. C., is modernizing at a cost of approximately $2,500,000, including two new loading platforms, new looms to replace those destroyed by fire at the Langley Mill last year, new combers, automatic quilling machines, and improvement of the spinning room.

Clark Thread Co., which is building a thread mill in Albany, Ga., will construct a spool plant adjacent to the thread unit. The company has sold its large mill at Newark, N. J., in the final step of a program started 15 years ago when it built a plant at Austell, Ga.

Columbus Mfg. Co., Columbus, Ga., has been sold to West Point Mfg. Co., West Point, Ga., for an undisclosed sum.

Continental Mills, Lewiston, Me., is continuing its $2,000,000 expenditure program for new equipment and rearrangement. Installation of 90 new spinning frames is in progress, new looms have been and are being installed, new controlled-draft machinery is in operation, and the whole plant is well lighted by new fluorescent equipment.

Dallas Cotton Mills Co., Dallas, Tex., will transfer about 300 looms to Fort Worth Cotton Mills, Fort Worth, Tex., as part of a consolidation move.

Dwight Mfg. Co., Gadsden, Ala., is to be air-conditioned at a cost of $500,000. The project has a two-fold purpose: improvement in working conditions for employees, and production of a more uniform product.

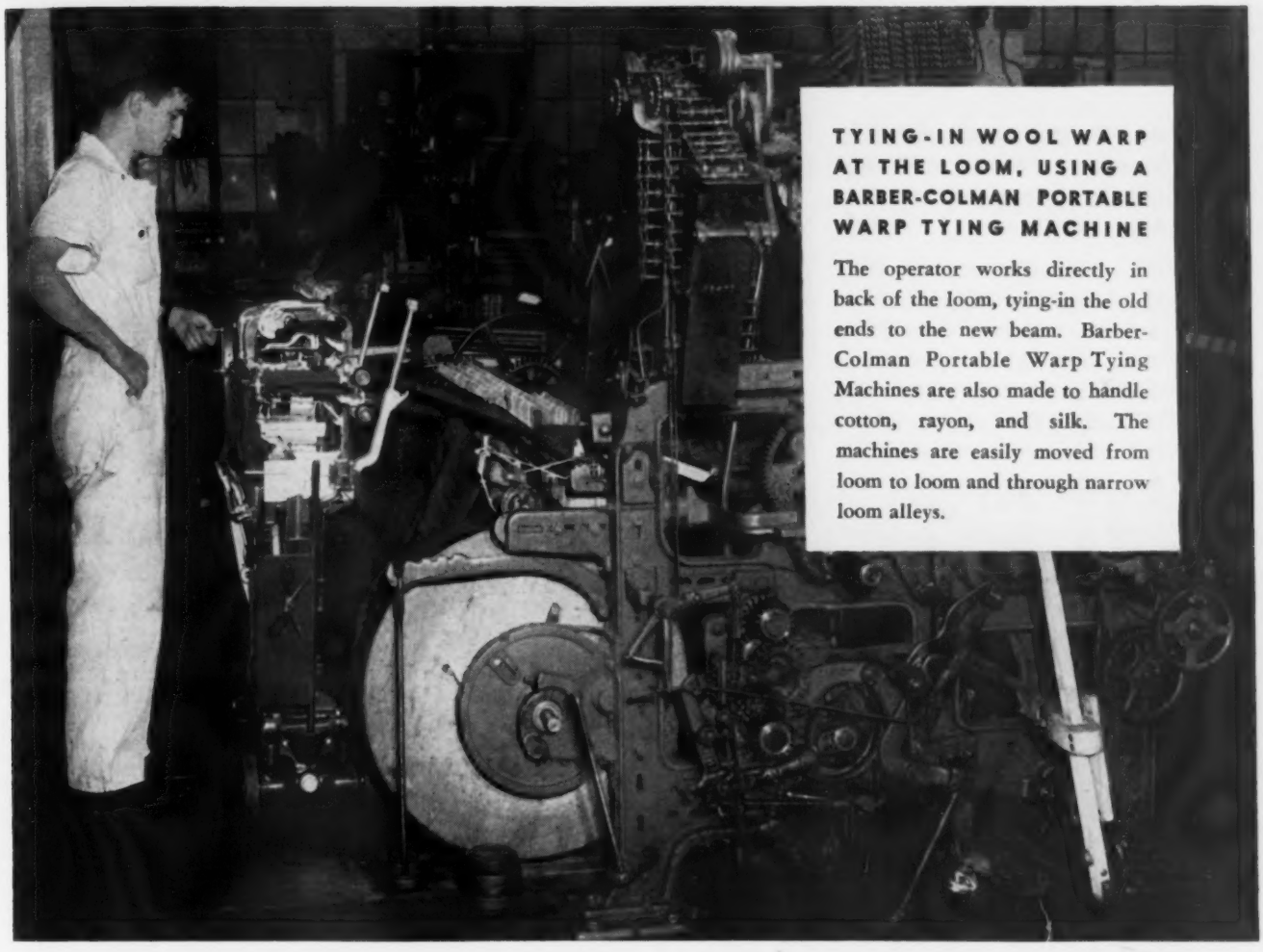
Ingram Spinning Mills, Nashville, Tenn., is reported to be negotiating the sale of its property for several hundred thousand dollars.

Macanal Mills, Inc., Salisbury, N. C., is installing new machinery. A replacement rate of 20% per year will be maintained until all old equipment has been replaced by new and modern machinery.

Mooresville Cotton Mills, Inc., Mooresville, N. C., plans an expansion program totaling $1,200,000. Work will be started at once, with Barger Bros., Mooresville, in charge. The program calls for a new mill building, 460x135 ft. It will be brick, one-story with basement, and will cost about $500,000. The structure will house 10,000-spindles for the spinning of synthetic fiber, equipment for which will cost about $700,000. The company has already erected a 10,000-gal. water storage tank near the site.

Muscogee Mfg. Co., Columbus, Ga., has purchased a local site for $100,000 to be used for expansion.

National Automotive Fibers, Inc., Detroit, Mich., has let



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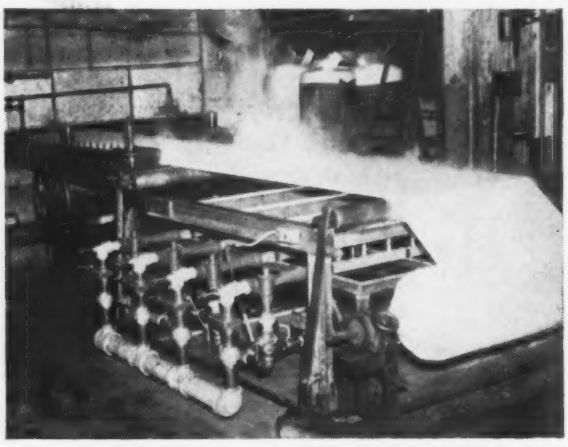

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KENWOOD MILLS

Albany 1, New York

contract to O. W. Burke Co., Detroit, for addition to cost close to $100,000, with equipment.

Pacific Mills, Boston, Mass., has started work again at Capital City mill, Columbia, S. C., where machinery is being installed during limited operations. There are now two shifts working, with plans set for a third shift to be added later.

Proximity Mfg. Co., Greensboro, N. C., has been granted approval by OHE for construction of a $100,000 addition to its Pineville, N. C., plant.

Rex Mills, Ranlo, N. C., plans erection of a 78x127 ft. addition to the twister room of its No. 1 unit; 32 twisters will be installed.

Standard - Coosa - Thatcher Co., plans for a $500,000 improvement program at Sauquoit Mills, Gadsden, Ala. These improvements will include a building addition of 15,000 sq. ft., installation of modern machinery, and air-conditioning of the plant. The company has installed new fluorescent lighting, and more than 100 new motors have been ordered. Company has requested bids for erection of a new addition to Mill No. 2. Robert & Co., Atlanta, Ga., are engineers.

J. P. Stevens & Co., Inc., New York, N. Y., has purchased from Colonial Mill Inc., the building housing the plant of Hannah Pickett Mills Co., Rockingham, N. C., for $850,000, and took possession July 1. The plant was formerly known as the Hannah Pickett Mill No. 2. Machinery in the mill was not included in the sale.

Tifton Cotton Mills, Tifton, Ga., has just completed a variety of improvements including a new laboratory for testing yarn and a new lunch room. New machinery has been installed, and the mill village is being improved.

Wool Mill News

Amory Worsted Co., Manchester, N. H., is spending $1,500,000 for new equipment.

Esterly Woolen Co., Esterly, Pa., has ordered equipment for an entirely new mill.

Chatham Mfg. Co., Elkin, N. C., has received permission from OHE to construct a four-story warehouse which will cost $250,000. Building will be used for storing blankets manufactured by the company and replaces a building in Winston-Salem, N. C., which was sold to the Navy during the war.

Hopkinton Woolen Mills, Inc., Hopkinton, R. I., damaged in a $100,000 fire on Apr. 7, will be liquidated at auction.

Hudson Worsted Co., Hudson, Mass., plans to construct a wool processing and storage building. Lockwood Greene Engineers, Inc., Boston, is the engineer.

F. C. Huyck & Sons, has received OHE approval for $600,000 in new construction at its plant at Rensselaer, N. Y. The immediate project calls for a two-story structure to provide more adequate wet finishing and fabricating facilities; a locker room for employees, and steel warehouses to facilitate shipping. This is part of a $1,300,000 improvement program detailed in the May issue.

Peace Dale Mills, Peacedale, R. I., will move the machinery from its 100-year-old mill to a new location in the South which has not yet been announced. About 700 persons are employed in the mill.

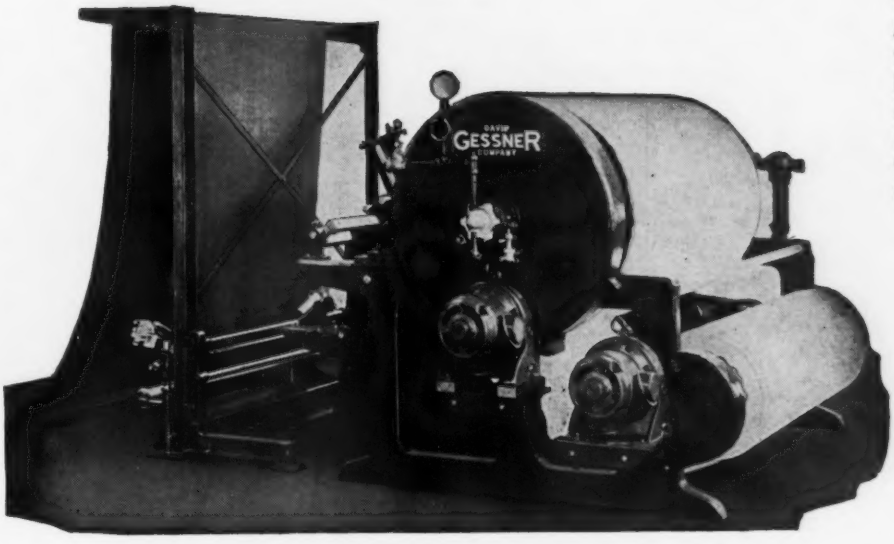
Uxbridge Worsted Co., Inc., Uxbridge, Mass., which owns Macon Textiles, Inc., Macon, Ga., is installing 27 new pin drafters developed by Uxbridge and Warner & Swasey. Macon Textiles, Inc., is said to have developed a new system of spinning worsted yarn on cotton machinery which is unlike the American system.

Virginia Woolen Co., Middleway, Va., has begun superstructure for a new mill to cost close to $1,000,000, including machinery.

The Wanskuck Co., Providence, R. I., has started construction of a two-story brick addition to be used for the storage of wool. The addition will be L-shaped, 204x142 ft. Estimated cost is $144,000.

Winthrop Mills, Winthrop, Me., now in receivership, has filed a petition for arrangement to continue the plant as a going concern.

The new Gessner Open Decating Machine Simplifies Operations and Cuts Costs



The new Gessner Open Decating Machine embodies important new time and money-saving principles. In fact, Gessner Open Decating has become a one man operation in an ever-growing number of mills. Gessner improvements include automatic tension controls for the decating apron, which prevent apron slap even at high speeds and which greatly lengthen the life of the apron. Mechanisms control the firmness of the decating roll without added tension on the apron. Individual motors drive each cylinder. There are no clutches. The Gessner Open Decating Machine shown here is equipped with a platform and guides to guide the cloth as it is loaded into the machine.

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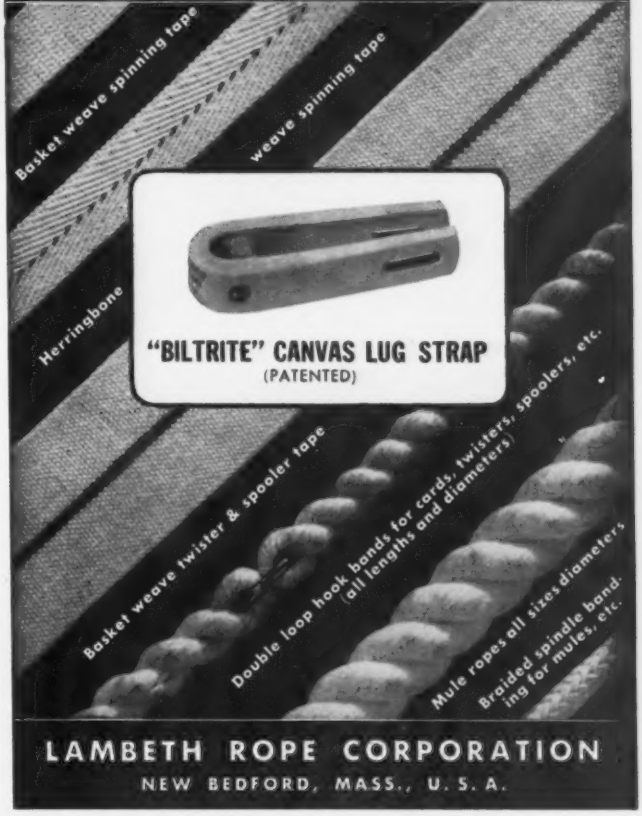
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Rayon & Silk Mills

American Enka Corp., which has under construction a $25,000,000 rayon plant near Morristown, Tenn., plans to double the size of this plant, which calls for the expenditure of another $25,000,000; or $50,000,000 in all for the complete plant. Work on the addition is to start after completion of the present plant and is to be finished in three years.

American Silk Mills, Orange, Va., will begin superstructure soon for new two-story addition which will cost over $125,000, with machinery. CPA has approved project.

American Viscose Corp., Parkersburg, W. Va., has plans for new addition to cost over $125,000 with equipment.

Bruck Silk Mills, Ltd., Sherbrooke, Que., has completed its new $500,000 rayon manufacturing plant. It is reported that 200 looms, Draper and Crompton & Knowles, will be in operation before the end of 1947, producing drapery, upholstery, and sportswear fabrics. The plant will house a modern skein- and package-dyeing unit since a large proportion of production will comprise yarn-dyed fabrics.

Carter Fabrics Corp., Greensboro, N. C., has begun a $500,000 program for modernization at its Greensboro plant; 24,000 new rayon spindles will be installed. To make room for the new machinery, the company is moving 18,000 spindles of an older type to its plant in South Boston, Va., recently completed. At the Greensboro plant an addition of 15,000 sq. ft. will be constructed, largely for warehouse space. Of the $500,000 cost of modernization, about $450,000 will go for machinery and air control.

Consolidated Textiles, Ltd., Montreal, has awarded contract for the erection of a textile mill in Joliette, Que., to cost about $150,000. Plans call for a one-story structure, 100x337 ft., having concrete foundation, brick and concrete walls, and steel framework.

Finewear Mfg. Co., Inc., Spartanburg, S. C., has started operations with 3,584 spindles, 60 employees, and an annual payroll of $110,000.

Guyan Mills, Inc., Valley Falls, R. I., has work well underway on an addition. Heating contract has been let to Lincoln & Lane, Pawtucket, R. I. The addition will be of brick and steel construction, two stories and basement. One part will be used as a warehouse and the rest will house mill equipment. E. K. Hayslip is general manager.

Jageir Textile Industries, Inc., Petersburg, Va., has changed its name to Jageir Textile Mills, Inc. Joseph Eskenard is president.

Julius Kayser, Ltd., Johannesburg, Union of South Africa, with a capital of $2,403,000, has been registered in the Union. The company's new plant will be built in Bloemfontein, and trained technicans from the U. S. and Canada will be sent to start operations.

Longleaf Mill, Inc., Matthews, N. C., is now in production of long-staple spun-rayon yarns. A. M. Whisnant is president and D. M. McKechnie, superintendent.

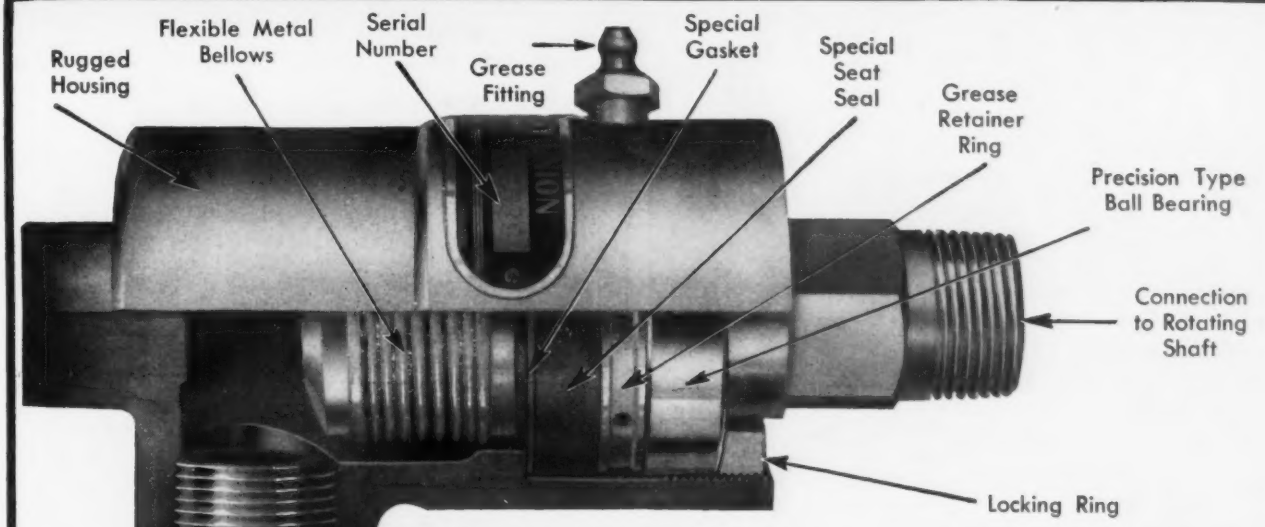
Mandeville Mills, Carrollton, Ga., manufacturer of spun rayon, will replace practically all machinery and construct a new dye plant. At Unit No. 1, 25 new spinning frames and 35 changeovers have been installed in the spinning department. In the carding department, all fly frames have been replaced with long draft. In the No. 2 Unit, 10 new spinning frames are being installed, and installation of 10 changeovers has been completed.

Marietta Silk Co., Columbia, Pa., has let contract to William Linker Co., Philadelphia, Pa., for two-story addition to cost over $100,000, with equipment.

Mt. Vernon - Woodberry Mills, Inc., Baltimore, Md., is converting three local plants for addition of synthetic yarns and fabrics. It plans eventually to eliminate cotton in some departments.

Pacific Mills, Boston, Mass., is planning a greatly expanded program of rayon production including extensive development of converting and mill operations to manufacture fabrics which will be channeled primarily into popular-priced sportswear and dresses.

Rose Woven Labels Co., Lewiston, Me., has been formed with Irving M. Bell,



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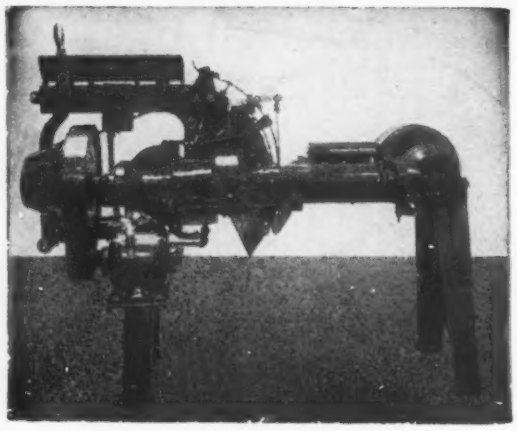

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president and treasurer, and Leonard Bell, sales manager. It is now in full production of all types of woven labels.

Stretch-Tex Co., Huntsville, Ala., recently chartered with capitalization of $150,000, has purchased two one-story buildings and will improve and equip for manufacture of elastic webbing.

Sytz Fabrics, Inc., Dyersburg, Tenn., has awarded contract for its new textile plant to Clayton Construction Co., Dyersburg, Tenn. The plant will begin operations in the fall with 60 workers. The charter for the textile plant, financed locally and capitalized at $250,000, was filed in March.

Tennessee Eastman Corp., Kingsport, Tenn., has received governmental approval for the construction of a research laboratory building to cost $90,000.

Verney Corp., Boston, Mass., has purchased one of the Amoskeag buildings at Manchester, N. H., to provide for further expansion. The new mill property has an area of 130,000 sq. ft.

Visking Corp., North Little Rock, Ark., is nearing completion of its new plant, and will begin production late this summer of "Viskon," non-woven fabric made of cotton and synthetic fibers, to be sold to manufacturers of household articles and materials for wrapping, insulating, and filtering. B. H. Schenk of Chicago, chief engineer for Visking, is in charge of construction.

Wilkes-Barre Lace Mfg. Co., Wilkes-Barre, Pa., which recently purchased Chadwick-Hoskins Mills No. 2 at Charlotte, N. C., from Textron Southern, Inc., is planning extensive expansion of the plant's operations.

Knitting Mill News

Barbet Mills, Inc., New York, N. Y., has completed an expansion program which permits it to make its own yarns for the manufacture of circular knit goods.

H. F. Binch, Inc., Glens Falls, N. Y., a plant of Native Laces & Textiles, Inc., is completing a three-story building which will be used for new machinery installations and for added storage space.

Butterfly Hosiery Co., Ltd., has modernized its plant in Drummondville, Que., and replaced a number of the older full-fashioned knitting machines with high-speed, 32-section, 51-gage machines. Additional units on order are promised for delivery during 1947.

J. A. Cline & Sons, Hilderbran, N. C., has completed a new fireproof mill building that has added 17,000 sq. ft. of floor space to the plant. The new building will be used exclusively for knitting. The old building, which has 30,000 sq. ft. of floor space, will be used for finishing and other operations and will provide quarters for the business office. Forty-eight new Scott & Williams links-and-links machines are being installed. The number of operatives will be increased by at least 75.

Hollar Hosiery Mill Co., Hickory, N. C., has opened a branch plant at Yadkinville, N. C.

Hudson Hosiery Mill, Shelby, N. C., began operations June 1. The mill will produce full-fashioned hose and has been under construction for a year. The local Shelby mill is a branch of Hudson Hosiery Mills, Charlotte, N. C.

Jantzen Knitting Mills of Canada, Ltd., Vancouver, B. C., has been reorganized and control has been acquired from eastern interests by a group headed by J. R. Bayne, newly appointed managing director. W. S. Charlton has been elected president to replace G. Lyal Fraser.

Leslie Knitting Mills, Inc., Jersey City, N. J., has recently been formed with Herbert S. Levy, president, secretary and superintendent, and Nicholas C. Kehl, vice president and treasurer; and is now in full production of men's, women's, and children's novelty and staple sweaters.

Macon Hosiery Mills, Macon, Ga., is getting into large scale production of nylon hosiery at its $200,000 plant. The organization is locally owned.

Pilgrim Full-Fashioned Mills, Valdese, N. C., has been granted a writ of incorporation for a hosiery plant, with an authorized capital stock of

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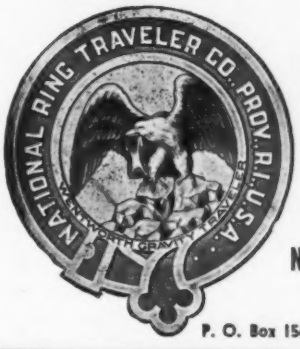

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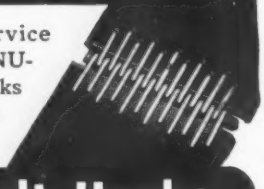

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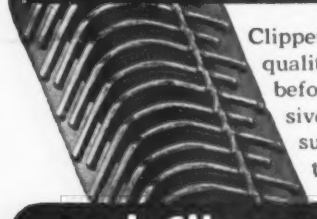

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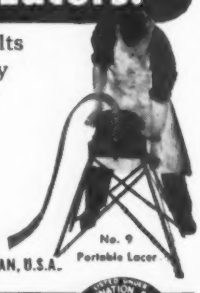


CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN, U.S.A.

$200,000—$3,000 of which was subscribed. Officers are: J. C. Brinkley, president; J. D. Brinkley, first vice president; Sam Brinkley, secretary-treasurer; Kurt Theumller, second vice president and general manager, and T. F. Harris, superintendent. Using Wildman single head machines, the plant will manufacture nylon hosiery and hopes to begin production by late July or early August.

Sellers Hosiery Mills, Burlington, N. C., has received approval from OHE for construction of a building to cost $56,000, which will house new machinery.

Shannon Hosiery Mills, Inc., Columbus, Ga., manufacturers of nylon and silk hose, will increase production 100%.

Spruce Pine Hosiery Co., Spruce Pine, N. C., has purchased the mill and equipment of Granite Hosiery Mills. Operations will continue at Granite Falls, N. C., until a building can be constructed for the manufacture of men's hose.

Tejidos Soltex, S. A. (Suntex Textiles, Inc.) has been organized and will begin operations in the near future. The new mill with offices in Havana, Cuba, capitalized at $500,000 will manufacture and finish tricot fabric on its initial installation of six 168-in. machines of the latest type.

Tower Hosiery Mills, Burlington, N. C., plans construction of a one-story addition which will cost $110,000.

Wayne Knitting Mills, Fort Wayne, Ind., has let contract to Carrier Corp., Syracuse, N. Y., for installation of air-conditioning system in the new mill now being constructed at Humboldt, Tenn. Entire project will represent investment in excess of $1,500,000.

Wrenn Hosiery Co., Thomasville, N. C., has awarded contract for an addition to its plant.

Wisteria Hosiery Mills, Inc., Gastonia, N. C., has completed its new $250,000 plant addition.

Young Textile Mills, New York, N. Y., is moving to a temporary Bronx plant to await the construction of a permanent plant on Morris Park Ave.

Dyeing & Finishing Plant News

Berkshire Fine Spinning Associates, Providence, R. I., has acquired a 110-acre tract near Erwin, Tenn., where it plans to build a finishing plant required by the expanding business of the company. The finishing work is done at present under contract.

D. J. Skein Dyers, Inc., New York, N. Y., has moved to 372-380 Ten Eyck St., Brooklyn, N. Y.

Delta Finishing Co., Philadelphia, Pa., has let contract to Leslie E. Bender, Philadelphia, for a one and two-story addition, to cost over $200,000 with equipment.

Germantown Dye Works, Philadelphia, Pa., plans rebuilding portion of mill recently damaged by fire, with loss reported close to $50,000.

Liberty Chatham Industrial Corp., Siler City, N. C., plans one-story mill to be occupied by a company, name not announced, as a hosiery finishing plant.

Lowell Bleachery South, Griffin, Ga., will take bids soon for a new mill at Experiment, Ga., for dyeing and finishing service. J. E. Sirrine & Co., Greenville, S. C., are engineers.

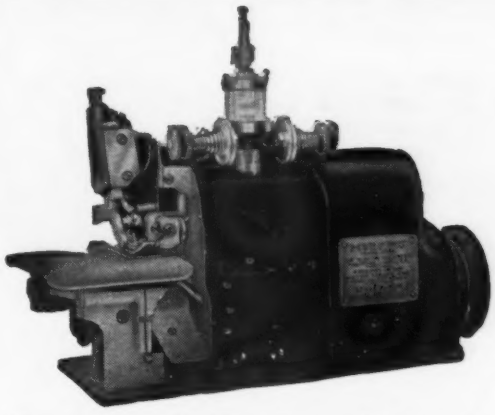
Morritt & Pfeifer, Inc., screen printer, has moved from 632 Broadway, New York, N. Y., to 6201 15th Ave., Brooklyn, N. Y.

United Process, Inc., Eastondale, Mass., is developing a flocking and coating process for textiles. Alfred H. Pagell is president and John S. Dreyfus treasurer of the company.

Virginia Woolen Co., Midway, Va., has started work on a one-story finishing plant. Building and equipment will cost in excess of $1,000,000.

Miscellaneous Mill News

Monroe Fiber Mill Co., Inc., Monroe, N. C., which will be operated by J. E. Crowley Co., Charlotte, N. C., is a newly organized concern which will manufacture bagging, rope, and other materials from waste cotton.



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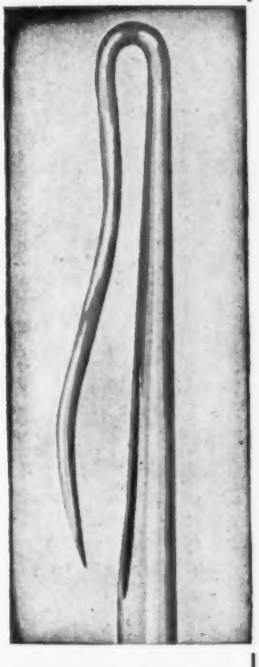

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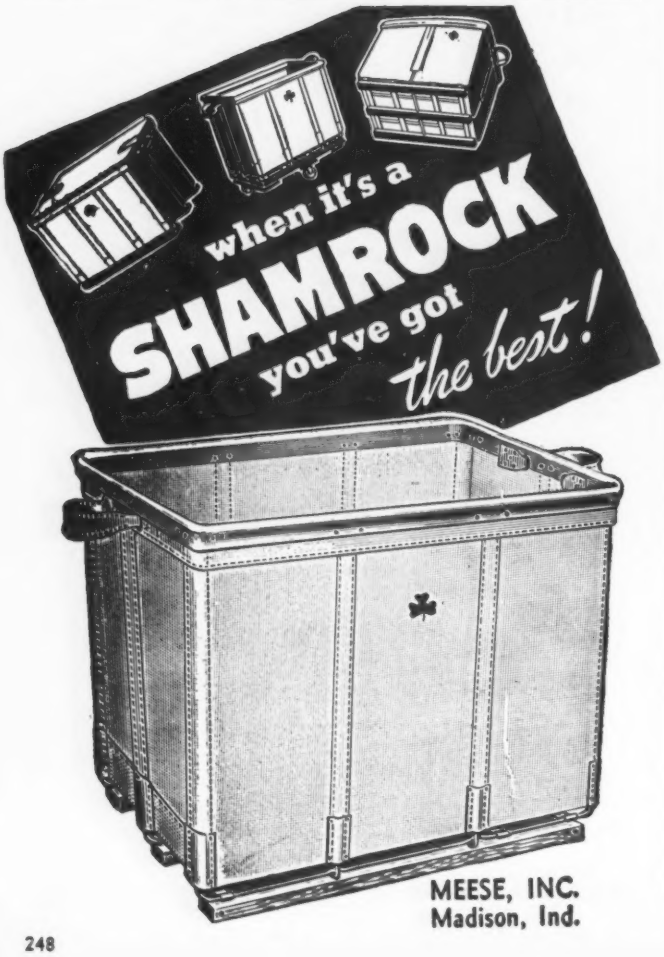

MEESE, INC.
Madison, Ind.

NEWS ABOUT Men

Harry C. Piper has been elected chairman of the board of directors of Munsingwear, Inc., Minneapolis, Minn., in the reorganization of executive staff. **Coy C. Humphrey** succeeds **Ernest L. Olrich** as president and director; **Fred E. King** has been named executive vice president and secretary; and **George D. McConnell** has been elected vice president, treasurer, and a director.

Malcolm A. Angus, of New York, has been elected president of Patterson Mills, Inc., Patterson, N. C.

Dr. Frank H. Reichel, president of American Viscose Corp., Wilmington, Del., received an honorary degree as Doctor of Science from Allegheny College, Meadville, Pa., "in recognition of his accomplishments in the field of science" at the school's 132nd annual commencement.

Max W. Sullivan has been named president of Rhode Island School of Design. He succeeds **Mrs. Murray S. Danforth**, who has served as president since 1931 and who will now become chairman of the board. Mr. Sullivan is succeeded as dean by **Albert E. Simonson.**

William A. Moorhead, vice president and general manager of Joanna Textile Mills, Goldville, S. C., recently marked 40 yr. with that company. He joined the Banna Mfg. Co., Goldville, Joanna's predecessor, in 1907 as bookkeeper-stenographer. He was made president and general manager in 1920. In the 40 years, the plant has expanded from 5,000 to 104,000 spindles and 2,800 looms.

Clarke W. Tobin, executive vice-president and director of Propper - McCallum Hosiery Co., Northampton, Mass., has been elected to board of directors of Botany Mills, Inc., Passaic, N. J. He succeeds the late Karl A. Panthen, vice president of Chase National Bank.

William H. Grier, superintendent of Rock Hill Printing & Finishing Co., Rock Hill, S. C., has been promoted to vice president and general manager. He succeeds Walter T. Jenkins, who died recently of injuries sustained in an automobile accident. **J. J. Adams** succeeds Mr. Grier as superintendent.

CHARLES C. HERTWIG, vice president and treasurer of Bibb Mfg. Co., Macon, Ga., was elected president of the Cotton Manufacturers Association of Georgia at the annual meeting.

James A. King, who for the past three years has been vice president in charge of sales for Textron, Inc., Providence, R. I., has given up that post to take up new duties in assistance to **Royal Little**, president. A successor to Mr. King is to be appointed shortly.

Kenneth Collins has been appointed vice president in charge of public relations and advertising of Burlington Mills Corp. of New York. He resigned from the advertising firm of Donahue & Coe to accept this newly created post. Mr. Collins' business career includes 6 yr. as executive vice president and publicity director of R. H. Macy & Co., and 6 yr. as vice president and a director of Gimbel Bros.

Franklin W. Hobbs was elected chairman of the board of the Textile Foundation for the 18th consecutive term at the annual meeting in Washington, D. C. Other members of the board are **Frank D.**

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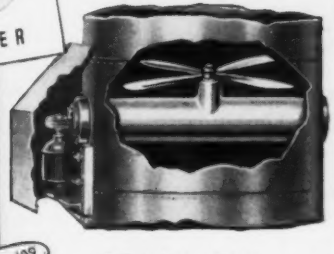

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Cheney (treasurer), **Donald Comer, Clinton P. Anderson,** and **W. Averell Harriman. Edward T. Pickard** is secretary and assistant treasurer.

Franklin R. Ehmann, controller of Hellwig Dyeing Corp., has been re-elected a director of the Philadelphia Control of Controllers Institute of America.

Matthew A. Collins, vice president of Lockport Cotton Batting Co., Lockport, N. Y., has completed 51 yr. of service with the company he has served as vice president for 15 yr.

W. P. Smedley has been appointed assistant vice president in charge of all yarn-throwing production at Duplan Corp., New York, N. Y. Mr. Smedley joined the corporation in 1922 as a foreman. For ten years he was manager of the throwing plant at Nanticoke, Pa., and since 1932 manager of the Kingston mill. **John Haesler** has been named assistant vice president of Duplan Corp., New York. He received his technical training in the textile school at Zurich, Switzerland.

William R. Beuret has been named vice president of Amoskeag-Lawrence Mills, Amory Worsted Mills, and Amoskeag Mills, Manchester, N. H., of which he has been general manager for several years.

Harold A. Roth has joined Continental Hosiery Corp., New York, as assistant to the president, **Reuben Gordon.**

William J. Durocher, manager of Arnold Print Works, Inc., North Adams, Mass., since its acquisition in 1942 by Aspinook Corp., has been appointed general manager of both Arnold Print Works and Hampton Print Works division at Easthampton, Mass. Working under Mr. Durocher, **William Guinan** will continue to serve as manager of Hampton Print Works. Other personnel changes at Arnold: **Irving C. Ruhman,** former assistant manager, becomes acting head; **Harold B. Grange,** former chief colorist and superintendent of printing, is now plant superintendent; and **J. Haines Spencer** becomes chief colorist and superintendent of printing.

John H. Fagan, formerly superintendent of Tolar, Hart & Holt Mills, Inc., Fayetteville, N. C., has resigned to become general superintendent of the Nos. 1, 2, and 3 plants of Profile Cotton Mills, Jacksonville, Ala.

BERTRAND W. HAYWARD has been appointed director of the Philadelphia Textile Institute, a new office in the development of a wider scope of activities for this school. Dean Richard S. Cox is his associate in the broadening aspect of industry's requirements. Mr. Hayward has been teacher, coach, and principal in several Maine schools and is active in educational societies.

William C. Priestley, for many years with Native Lace Works, Inc., has been promoted to general manager. **Alan J. Bisbee,** formerly general manager of Hightstown Mill, has become general manager of Natona Mills plant of Native Laces & Textiles, Inc., Dallas, Pa.

Thomas Nelson, dean-emeritus of the Textile School of N. C. State College, Raleigh, N. C., was recently awarded the "Man of the Year" trophy by Phi Psi Fraternity.

Dr. Harold C. Chapin has been appointed full-time secretary of the American Association of Textile Chemists & Colorists. He became part-time secretary in 1933. Dr. Chapin has served as assistant professor of chemistry in Lowell Textile Institute since 1920. He received his Ph. D. degree from Harvard in 1910.

Rudolph Lux has been appointed general superintendent of Berkeley and Blackstone, Mill Divs. of Lonsdale Co., Berkeley and Blackstone, R. I. Mr. Lux succeeds **Carl A. Johnson,** resigned. For the past 10 yr. he has been superintendent of Berkeley Mill Div. of Lonsdale Co.

Harry S. March has been

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NEWS ABOUT MEN

named purchasing agent for Nashua Mfg. Co., Nashua, N. H. He succeeds **Ernest Gray**, who retired after 55 yr. with the company.

John H. McCusker has been appointed assistant general manager of the Natona Mills plant of Native Laces & Textiles, Inc., Dallas, Pa. He recently resigned as superintendent of bleaching, dyeing, and finishing at Rhode Island Lace Works, West Barrington, R. I., after 16 yr. with the company.

Richard Stroud, who has been general manager of Abbeville Cotton Mills, Abbeville, S. C., and the woolen mills at McCormick and Johnston, S. C., will become general manager of Excelsior Woolen Mills, Union, S. C. He succeeds **Peter Haynes** who has been manager at Excelsior Mills for the past few years and will be with the selling department of woolen goods with headquarters in New York.

Louis D. deLoach, executive assistant to **E. Lee Skipper**, vice president in charge of production for Springs Cotton Mills, Lancaster, S. C., has resigned to become resident manager of the D. E. Converse Co. plant, Glendale, S. C.

Charles H. Dyson was elected treasurer and **Robert B. Hamblett**, clerk, at a recent meeting of the stockholders of Nashua Mfg. Co.

Dr. Charles L. Mantell has resigned as director of United Merchants Laboratories, Inc., New York. He left for the Argentine on June 22 to serve in a consulting capacity with large industrial organizations there. On his return, he will devote his time to his own consulting practice and laboratory which he has maintained on a part-time basis at 601 West 26th St. United Merchants Laboratories, Inc., serves the various units of United Merchants & Manufacturers, Inc. **Herman P. Waechter** will continue in charge of the engineering division, **Theodore J. Dabrowski** in charge of the research and testing sections, and **J. P. McGann** in charge of the patent department.

Britt Armfield in charge of the foreign division of Burlington Mills Corp., and **Le Roy Stadler**, technical and production adviser, have resigned. **A. L. Werner**, president of Fabritex Corp., is succeeding Mr. Armfield in charge of the foreign division which has been reorganized as Burlington International.

John W. Geil, who has been associated with the Turner Halsey Co., New York, for 37 yr., has been named head of the gray-goods department of Springs Cotton Mills, Inc., Lancaster, S. C.

Frederick H. Graichen has joined Dunn Woolen Co. in charge of the New York office. He has been associated with American Woolen Co. since 1916. He has also been a professor of woolens and worsteds for evening classes at the Strubenmuller Textile High School, New York.

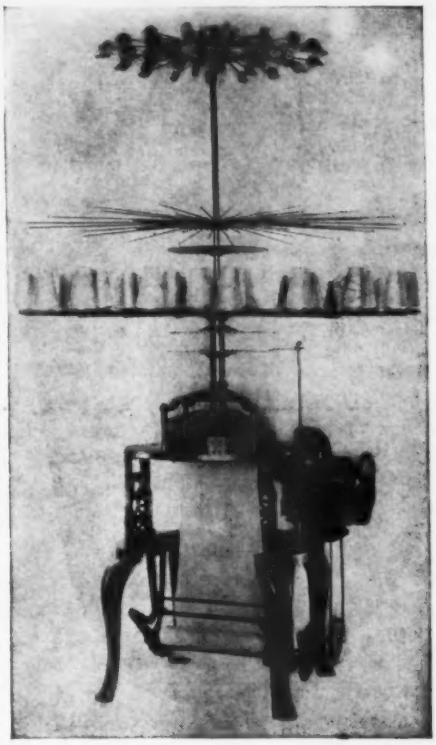
Ward H. Bushee, superintendent of production at Burlington Mills, Rockingham, N. C., has been appointed economic advisor to the cotton textile industry at Kobe, Japan, by the War Department. He will be stationed in Japan for two years.

Dr. G. Nathan Reed, a native of Campbell, Texas, has joined the staff of the Institute of Textile Technology, Charlottesville, Va., in the Division of Organic Chemistry. He holds degrees of B. S. from Oklahoma Agricultural & Mechanical College, M. S. from the University of Oklahoma, and Ph. D. ('38) in organic chemistry from Kansas State College. He is author of several papers on the subject of starch. **Dr. Helmut Wakeham**, of Lincoln, Neb., has also joined ITT to work in the Div. of Physical Chemistry. **Dr. E. R. Rushton**, of Alabama, and **Dr. Alex F. Robertson**, of Wisconsin, have also joined the institute.

George C. Buscher, head of the Buscher Yarn Div. of Turner Halsey Co., New York, has resigned to join the Burlington Mills Corp. of New York as head of its yarn sales department.

John D. Rollins, cost engineer with Waverly Mills, Inc., Laurinburg, N. C., has resigned, and joined Borden Mills, Inc., Kingsport, Tenn., as manager of quality control department.

Woodrow W. Carruthers, assistant purchasing agent for



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WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

Proximity Mfg. Co., Greensboro, N. C., since June, 1941, and prior to that time in other posts with the company, has been appointed purchasing agent. He succeeds the late Arthur C. Goodwin.

Carl I. Taber is joining the nylon division of E. I. du Pont de Nemours & Co., Wilmington, Del., to take charge of the nylon fabric development. He has been manager of fabric development for the acetate division of the company.

Robert G. Blake, general manager and wool buyer for the former Lone Star Woolen Mills and later for Blue Bonnet Blanket Mills, San Marcos, Texas, has become associated with Pioneer Worsted Co., New Braunfels, Tex.

Raymond R. Barrows, formerly contracting officer for knit goods and textiles of the Quartermaster Purchasing Office, New York, has joined Delaware Hosiery Co., Seaford, Del., as manager.

Frank L. Byrd, formerly maintenance superintendent of weaving at Dan River Mills, Danville, Va., has left for Albertville, Belgian Congo, where he will stay for one year for the purpose of erecting a cotton mill for Filatures-Tissages Africans. The mill will contain 20,000 spindles and 500 Draper looms and make cotton fabrics for native use.

Horace L. Lanan has taken the position of plant superintendent with Malden Spinning & Dyeing Co., Malden, Mass. Mr. Lanan was with E. & L. Bry & Co. for 20 yrs. in charge of picking and carding, and afterward operated his own business.

Frank H. Gleason, formerly superintendent of weaving at E. W. Twitchell Corp., Philadelphia, Pa., has become plant manager of Cotswold Fibers, Inc., Columbus, Ga.

Allen Jones, general superintendent of the Muscogee Mfg. Co., Columbus, Ga., has resigned to assume new duties as manager of Lane Cotton Mills, New Orleans, La.

John McGuire has been promoted to general superintendent of the yarn division of Jamestown Worsted Mills, Jamestown, N. Y.

Thomas Gray has become superintendent of yarns at Botany Mills, Passaic, N. J. He was formerly with W. J. Dickey & Sons, Oella, Md.

Obituary

Gerrish H. Milliken, 69, president of Deering, Milliken & Co., New York, and an officer in many of its related textile mills, died June 11 while playing golf on the links near his summer home at Southampton, L. I. He was born in Dover, N. H. He entered his father's business after graduation from Yale in 1898. He played important roles in the activity of the Association of Textile Merchants of New York, in the formation of the Cotton-Textile Institute, and in relations of the industry with the government under NRA and OPA. He was a director of the National City Bank of New York. During his lifetime he was president of Dallas Mfg. Co., Darlington Mfg. Co., Gaffney Mfg. Co., Gainesville Cotton Mills., Garner Print Works & Bleachery, Little Androscoggin Water Power Co., and Rockland Finishing Co. He was director of Laurens Cotton Mills, Monarch Mills, and Whitney Mfg. Co.

William J. Gibbons died recently in Philadelphia. Mr. Gibbons was president of both Delta Finishing Co. and Summerdale Dyeing & Finishing Works, Inc., Philadelphia, Pa.

James T. Broadbent, 73, former president of Standard Textile Products Co., and general manager of the Mobile and Selma Cotton Mills and Albion Kaolin units of Standard Coated Products, a division of Interchemical Corp., died, June 1, in New Bedford, Mass. He was the first American to be made a fellow of the Textile Institute of Manchester, England.

Walter B. Thomas, Sr., 61, owner of Thomas Mills and Union Hosiery Mill, High Point, N. C., died recently. He went to High Point 32 yr. ago from Alabama and at the time of his death was president and treasurer of both mills.

Edward W. Stifel, Sr., 78, chairman of the board of J. L.

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Silicates of Soda

ALKALI

Grades to suit your needs—all uniformly high in quality...

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STANDARD SILICATE DIVISION
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ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

WRITE US FOR SAMPLES AND QUOTATIONS

D. R. KENYON & SON
RARITAN, N. J.

MACHINERY
TENTERING
and DRYING

VICTOR
MILL STARCH

A KEESTAR KEE PRODUCT

★ PENETRATES THOROUGHLY
★ DEPENDABLE
★ CARRIES WEIGHT INTO THE FABRIC
★ ALWAYS UNIFORM
★ BOILS THIN

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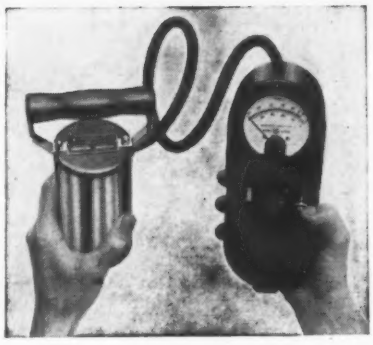

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Now you can insure against Moisture testing troubles — save time and avoid errors. Moisture Register instruments for the textile industry are accurate down to 0 %. They are completely portable and simple to use.

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The standard in moisture testing

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New York's Friendliest Hotel

WHERE YOUR COMFORT COMES FIRST

Here at the Prince George guests enjoy the homey luxury and genuine comforts seldom found in other New York hotels. 1,000 spacious, tastefully furnished rooms, all with bath. Five famous restaurants and a cafeteria. Quiet, yet within 3 minutes of the shopping district. Low rates make the Prince George New York's most outstanding hotel value. Write for booklet TW.

Single room with bath from $3.00
Double " " " " $5.00

Prince George Hotel

at 14 East 28th Street New York 16, N.Y.

Charles F. Rogers, Jr. — Manager

The McPHERSON Company

Engineers~Architects

INDUSTRIAL SURVEYS · PLANT SITE INVESTIGATIONS · PLANS
COMPLETE PLANT DESIGNS · APPRAISALS · VALUATIONS · LABOR
SAVING STUDIES · RESEARCH & REPORTS · PROCESS ANALYSIS

GREENVILLE, SOUTH CAROLINA

Stifel & Sons, Inc., Wheeling, W. Va., died recently.

R. H. Lewis, 69, president of Oxford Cotton Mills, Oxford, N. C., died June 15.

Joseph H. Reaney, 82, a pioneer knit goods manufacturer, died recently in St. Johnsville, N. Y. At an early age he entered employ of S. S. Lowery & Son, a knitting mill, at Utica, N. Y. He started his own mill in St. Johnsville in 1892. He absorbed other mills into his company, then called Union Mills, until he had a group of eight important plants.

Frank W. Leak, 72, Rockingham, N. C., former president and manager of the Leak, Wall & McCrae Cotton Mill, died recently.

William B. Hodge, who went South in 1907 as chief engineer for Cramerton Mills, Cramerton, N. C., died recently. At the time of his death, he was vice-president and Southern manager of the Parks-Cramer Co., and president and treasurer of William B. Hodge Co.

Walter Thomas Jenkins, 53, vice president and general manager of Rock Hill Printing & Finishing Co., Rock Hill, S. C., died May 18. He was a graduate of University of Georgia and Lowell Textile Institute. He went to Rock Hill in 1931 as plant engineer, having formerly been associated with Lockwood Greene Engineers at Charlotte, N. C.

Harold M. Turner, 65, senior vice president of Turner Halsey Co., New York, died recently.

Joseph A. Marren, vice president and general manager of Special Fabrics, Inc., a subsidiary of the Sayles Finishing Plants, Inc., Saylesville, died recently at Saylesville, R. I. He had been affiliated with Sayles for 36 yr.

Jules Chaussabel, 63, secretary of Kaback Finishing Co., Inc., of Brooklyn, N. Y., died recently. He had been previously with Mt. Hope Finishing Co., United Piece Dye Works, and Emerson Finishing Co.

William W. Fitler, Jr., 47, died recently in Beverly Hills, Calif. He was associated with Edward H. Fitler Co., Philadelphia. His father was president of the firm when it was known as The Philadelphia Cordage Works.

J. Edward Newton, 80, former treasurer of Barnard Mfg. Co., Arkwright Mills, and Troy Cotton & Woolen Mfg. Co., died at Providence, R. I., recently.

Edward T. Williams, 70, Shoemakersville, Pa. died recently in Reading, Pa. He organized the Merit Underwear Co., Shoemakersville, Pa., many years ago and at the time of his death was proprietor of the mill and superintendent.

Arthur Birch, 83, founder of Arlington Machine Works, Arlington, Mass., in 1897, died June 5. Mr. Birch retired in 1942 at which time the business was taken over by his nephew, Sydney P. Birch.

Charles Dexter Gay, 91, member of Gay Bros. Woolen Co., Wallingford, Vt., from 1890 to 1916, and president from 1902 to 1915, is dead.

Thomas F. Hanney, a director of Sipp-Eastwood Corp., Paterson, N. J., died on May 20. He was formerly president of the Warp Twisting-In Co. and vice president of Sipp-Eastwood Corp., being with the latter firm for 40 yr.

Maurice F. Donohue, 58 for 20 yr. with Atwood Machine Co., Stonington, Conn., travelling in the foreign field to erect plants and install his firm's throwing machinery, died in the airplane accident at La Guardia Field, New York, on May 31. He was later superintendent of Straus Silk Mill, Trenton, N. J., and more recently with RCA.

Horace Stebbins, 73, died June 2 in New York. He was at one time a member of Grinnell Willis & Co. and its successor firm, Watts, Stebbins & Co. The firm represented Wamsutta Mills among others.

Walter J. Howland, 79, for over 60 years active in the New England textile industry, died at West Barrington, R. I., on June 1. He was connected with B. B. & R. Knight Co., for 30 years, being superintendent of the Hebron mill for a decade; was superintendent of Mount Hope Mills, Warren, R. I., for 12 yr., and until his retirement last year was with the J. B. Jamieson, in charge of the Providence office.

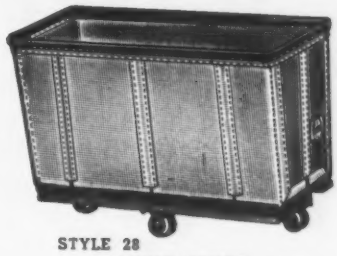
PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John: Penick and Ford's Starches and Gums for sizing Corduroy warps insure dependable weaving and maximum cutting efficiency. Let's try the type they recommend. Jim



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ROVING TRUCK

LANE
CANVAS
TRUCKS

For the well equipped mill

W. T. LANE & BROS., INC.
Manufacturers, Poughkeepsie, N. Y.

WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell Service, which includes Stainless Steel-lined tanks and tubs — round, rectangular and special shapes.

Catalog on request.

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville, Ky.

Caldwell TANKS and TOWERS

CAMACHINE 26-2A

CONVERTS FABRIC INTO NARROW STRIP IN ROLLS

WRITE FOR FOLDER

CAMERON MACHINE COMPANY
61 POPLAR STREET · BROOKLYN 2, N.Y.

ALL STEEL **ECONOMY** **BALING PRESSES**

ALL SIZES FOR ALL PURPOSES

LARGEST LINE BUILT IN U.S.A.

ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.

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The advertising rate is $6.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

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NEW ADVERTISEMENTS received by 10 A. M. August 5th will appear in the August issue, subject to limitation of space available

MEN WANTED
POSITIONS OPEN

Sales manager, chemicals

Plant manager tricot underwear mills

Cotton mill superintendents for New England and the South

Woolen and worsted men's wear and dress goods designers and stylers

Superintendent, assistant superintendent, overseers for scouring, carding, combing, drawing and spinning worsted yarn mills

Assistant superintendents and designers woolens

Assistant superintendent woolen yarn mill

Assistant superintendent bleachery

Boss dyers and second hands, woolens and worsteds, raw stock, yarn and pieces

Overseers woolen mule and frame spinning, and cotton spinning

Sewing room supervisor, boss knitter, overseer folding, pressing and packing for underwear mills

Cotton cloth room overseer (South)

Foreman examining, tubing and folding, synthetic yarn fabrics (South)

Overseer woolen carding, tapes and ring doffers, also overseer cotton carding

Overseer cotton spooling, warping and dressing $85.

Master mechanics, plant engineers and assistant plant engineer

Assistant designer, worsteds, $60-75 week

Second hands and fixers all departments

Rayon fabric designer (Canada); cotton waste plant superintendent, industrial engineer experienced in needle trades; time study engineers; fixer and foreman glove knitting machines; second hands rayon and cotton weaving; slasher tenders; woolen and worsted automatic loom fixers; shear tender; mule fixers; cloth inspectors and perchers.

We invite correspondence (confidential) with mill executives seeking new positions and employers seeking new executives.

CHARLES P. RAYMOND SERVICE, INC.

294 Washington St. Boston, Mass.

Over 45 years Confidential Employment Service for Textile Mills

WANTED
CLAIM ADJUSTER
for leading
New York City rayon converter.

Should be young man with negotiating ability, technical training in weaving, dyeing. State complete information as to schooling and industrial experience, references.

Address

P-202, Textile World
330 W. 42 St., New York 18, N. Y.

CIVIL SERVICE

EMPLOYMENT OPPORTUNITIES in the Navy Dept.—east and west coast areas—for scientists and technicians: For current vacancies consult the Scientific Personnel Bulletin, Employment Series, of the Office of Naval Research on file at Naval activities, scientific journals, regional offices of the U. S. Civil Service Commission, etc., or address specific inquiries, stating qualifications to the Scientific Personnel Branch, Navy Dept., Washington 25, D. C.

POSITIONS VACANT

COTTON YARN Specialist required by textile manufacturers in Chile, South America. Reply giving full particulars, age, experience, salary expected, etc. to H. W. St. John and Co., 18 Pearl Street, New York 4, N. Y.

WANTED: YOUNG man with textile education and experience to run weaving plant making worsted warp cotton filled gabardine on C&K wide looms; cotton combed poplins on Draper E and combed twills on Draper D. Opportunity for expansion. Must have managerial ability. P-1042, Textile World, 330 W. 42nd St., New York 18, N. Y.

KNITTER MECHANIC Experienced on Scott & Williams rib machines making cotton underwear cloth. Only those fully experienced need apply. High salary and good opportunity to right party. Write stating experience and full particulars. P-1071, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 260)

EXPERIENCED AGENTS
WANTED

Well Established Textile Processing Chemical Manufacturer Seeks Agents in Textile Centers Throughout Country. Good Commissions.

RW-1216, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
MANAGER
FOR
UNDERWEAR MILL

Nationally known ladies' underwear company needs experienced manager for mill in the South.

Must be a Southerner, not over 45 years of age, at least 8 to 10 years experience including cutting and sewing.

Excellent future for a man with initiative.

State personal data and experience in detail.

P-284, Textile World
330 West 42nd St., New York 18, N. Y.

WEAVING SUPERINTENDENT
FOR ASSOCIATION WITH A SUBSTANTIAL AND WELL-KNOWN ORGANIZATION IN ENGLISH-SPEAKING OVERSEAS COUNTRY

A promising future awaits the right person in a healthful and pleasant locality where he will establish himself in a new plant of growing country.

Applicant must have extensive experience on all operations pertaining to weaving of rayon fabrics of combination yarns, and must possess ability and experience in directing plant personnel and in production planning. Only those who possess these qualifications and who can supply the highest references will be considered. All inquiries will be treated in strictest confidence.

P-1112, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
MILL FOREMAN—SUPERINTENDENT

For 300-Box Loom Plant in Eastern Pennsylvania weaving high grade silk and synthetic fabrics. Thorough knowledge of automatic looms and preparatory machinery essential. Splendid opportunity for experienced man capable of producing quality merchandise.

Living Quarters available.

P-1115, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED

Garnetting mill wants young man with some clerical experience to take charge of various stocks and orders going through the mill, from raw material coming in to finished garnetted stock being shipped out. Some knowledge of wool and rayon waste desirable. Good memory for detail and ability to get along with associates desirable.

P-1215, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED:
OVERSEER

Old established New England Cotton mill has opening for overseer in Winding and Twisting Room. Only experienced man need apply.

Write complete details

P-1067, Textile World
330 West 42nd St., New York 18, N. Y.

SUPERINTENDENT
for
TIE FABRIC MILL

Excellent opportunity for the right man. Replies will be held in the strictest confidence.

P-1104, Textile World
330 West 42nd St., New York 18, N. Y.

Look at it this way...

YOU'RE PAYING FOR PRODUCTION

Your expenditure for Textile Machinery is made to buy performance—profitable performance. The ONLY way to be certain you get this is to be sure of the Company you buy from. Ask any experienced Textile man WHO ... and his answer will be ⟨ MLC ⟩

1—72" C&M 2-cylinder Brushing machine
3—Button Breakers 2-48", 1-50"
2—45" Textile Finishing Machine Co. 6-bowl Calenders
2—54' x 60" D&F 2-cylinder iron Shoddy Cards with feeders
1—Lot Numerous Card Parts
1—65" C&M Dewing Machine, motor driven
1—64" P&W Doubling & Rolling-up Machine with clock
1—Set 8 Textile Vertical 48" x 23" Copper Dry Cans
1—Set 20 H.P. Butterworth 108" Drycans, dryer
1—54" x 54" Taylor Wadsworth Batch Type Waste Duster
1—18" Copper Basket Extractor
2—26" Tolhurst Extractors, belt driven
1—32" Tolhurst Copper Basket Extractor
1—48" Hercules Rubber covered Hydro-Extractor, motor driven
1—45" Dobson & Barlow Cotton Feeder
3—40", 42" E&H Flat Folders with take-up stands
1—100" C&M Flat Folder, motor driven with hydraulic lift and roll-up stand
15—40", 80" card and Napper Grinders
200—40" Draper Model K, 20 Har Dobby Looms
2—45½" C&K 4 x 1 Dobby Looms, motorized
110—45½" reed space Modified E Draper Looms with lacey tops 3 bank stop-motions, warm take-up, belt driven
1—48" C&K 4 x 4 box Loom, 25 harness, belt driven, friction clutch
12—54½" C&K Box 20 & 35 Harness Dobby Looms
32—54" R.S. C&K 4 x 1 Auto. Looms, 20 harness double index dobby head
2—74" Heavy Duck Looms, roller top.
14—82" C&K 2 x 1 automatic Looms, 8 harness cam motions, motor driven
10—92" C&K, 4 x 1 Automatic Looms, 8 Harness, Cam Motion Motor Driven
16—92" & 100 C&K 2 x 2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
8—100" & 110" C&K 4 x 4 Box Looms, 25 harness, belt driven

MLC

COMPLETE MILL UNITS

Profit Opportunities

* A Six Set Woolen Yarn Mill
* Fourteen set Woolen Yarn Mill
* A Woolen Piece Goods Finishing Plant
* 3400 Spindle Bradford System Worsted Spinning Mill
* Six Loom Weaving Plant for Plastics or Wool—110" C&K 4 x 4 25 harness Looms, with accessory equipment
* 5208 Spindle Cotton Mill, equipped with 24 Cards and Foster #101 Winder. Priced for quick sale.
* 15,000 Spindle Cotton Mill with reconditioned machinery, including 61 Cards, Auxiliary Equipment and Winders.
* 30 Loom Label Weaving Mill
* 48 Loom Rayon Weaving Plant—44" & 46" Looms, etc.
* 20 Loom Rayon Weaving Plant—46" & 52" Looms, etc.
* Complete Engraving Equipment for Textile Printing Cylinders with 15 Pantograph Machines

MANY OTHER UNITS WITH PROFITABLE PRODUCTION POSSIBILITIES. PLEASE OUTLINE YOUR REQUIREMENTS.

SEND FOR COMPLETE DETAILED LIST OF MACHINERY FOR SALE.

1—58" Blake Inspecting, Winding & Measuring Machine
1—64" P&W Measure & Winder
3—66" P&W 60 & 100 yd. Measuring Machine, belt driven
3—60" Measuregraph Machines
1—70" King & Gerber Tubing Machine with Veeder-Root counter
1—12 Pole Smith Drum Skein Mercerizer
4—240 Spindle J&B 1⅞" gauge Mules
1—392 Spindle Smith 2" Gauge Mule
2—240 Spindle J&B gauge Mules
120—New Leland & Westinghouse ½ and 1 HP 3/60/220 V Heavy Duty Motors Also various size Rebuilt Motors
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder
1—66" Gessner 16 roll single cylinder Napper
1—72" Gessner 18 roll single cylinder Napper

1—80" Woonsocket 36 roll double acting Napper
4—80" D&F 20 roll Single and double Acting Nappers
1—30 x 30" Mezzera Wool Opener
1—76" Birch Measuring Perch, ceiling type
1—19" Tatham Rag Picker
9—40" Kitson Breaker Pickers, Finisher Pickers, and Single Process Pickers, motorized
1—42" Oldham Fearnaught Picker
2—18" C.D. Sargent Burr Pickers
1—54" Werner Single Color Printing Machine
1—60" R.B.F. 3 color Printer M. Dr.
6—52", 35½, 66, Voelker and Gessner Single and Double Bed Rotary Cloth Presses
3—50 spindle Lindsey-Hyde Adjustable Reels
5—82", 92" & 100" D&F Pin Type Reels, with creel, hack stand, neck reed, warp reel beamer with warp compressor.
1—60" C&M Single Blade Plush Shear
2—60", P&W Single Blade Woolen Shears
11—65½" P&W 2-blade Shears
1—76" C&M Double Blade Shears
2—80½" and 86" P&W Single Blade Shears
1—32" Grand Rapids 2-knife Knit Goods Slitting Machine
1—42" Grand Rapids 20-knife Slitting Machine
1—42" C&M Singer with hood
3—Lowell 2' cylinder Slashers
1—32½" D&F Jack Spool Winder
6—Smith and Furbush Spoolers, 44" drums, 48 ends, 44½" long spools with 10" head, with spool stands
1—60" C&M Single Brush Type Tiger
3—80 Spindle Hopedale band driven twisters 4½" ring, 5½" ga. Belt driven
1—180 spindle Draper Twister, 2½" ring
1—210 spindle Draper Twister, 2" ring
2—8-string Hemmer Wool Washers
2—#90 Univ. Winders
1—80 Spindle Foster Tube Winder
10—100 Sp. Foster Model 12 12A-21A Tube & Cone Winders

MACHINERY LIQUIDATING COMPANY

31-33 West 42nd Street NEW YORK 18, N. Y.

MLC DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT MLC

WAREHOUSES: Paterson, N. J., 9 Godwin St., Tel. SHerwood 2-0373—Hawthorne, N. J., 35 4th Ave., Tel. HAwthorne 7-9661

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

POSITIONS VACANT
(Continued from page 258)

LARGE ENGLISH Textile House require bulk quantities of cotton and rayon piece-goods in the "grey" states (undyed) for United Kingdom. Import licenses already available. Same firm also require first class competent textile agent to act as their representative in America with ability to arrange purchases and general supervision of American business. Replies in connection with above are to be sent to Box Number 46, Strand House, Portugal St., London, W.C. 2, England.

CHIEF CHEMIST for nationally known textile company. Must be PGD with supervisory experience in textiles or textile fibres. Salary to $10,000. P-1214, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

TEXTILE TECHNICIAN, 36, wide experience in cotton spinning. Also experience, plant erecting trough production. American and European machinery knowledges. Can furnish references. PW-184, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE ADMINISTRATIVE Executive conversant all phases cotton textile manufacturing, finishing, dyeing and printing desires connection preferably with progressive finishing, dyeing and printing concern. Would consider sales ethical line chemicals related to textiles. Now employed close corporation desire change for future advancement. Age 34. Married, two children. Minimum start $6,000.00. PW-281, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE ENGINEER, young, married, intelligent, experienced in fabric construction analysis testing dyeing. Would prefer connection with dye plant or laboratory. PW-1237, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPERT ON most types of knitting machines with broad experience both in U. S. and abroad. Also first class machinist with engineering background. Can build machines and develop improvements. Available immediately. PW-276, Textile World, 330 W. 42nd St., New York 18, N. Y.

ELECTRICAL ENGINEER, experienced in application and maintenance of motors, magnetic and electronic controls. PW-1240, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXECUTIVE'S ASSISTANT—Age 25, B.S. degree in textile engineering, designing, and management. Two years practical experience. Desires new connection with opportunities. Capable, Top references. PW-1229, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT CARDED yarn mills now employed would like to make change. Competent and progressive with valuable experience on coarse to medium cotton and synthetic yarns. Married, family, age 41, good education, excellent references. PW-1177, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER WEAVING with good reference and a long textile background. Sober and reliable, and hard worker. Good handler of help, desires interview with prospective employer. PW-1043, Textile World, 330 W. 42nd St., New York 18, N. Y.

GRADUATE ENGINEER with considerable experience in industrial relations and engineering, time and motion study, incentive plans, job evaluation, labor disputes, union contracts and arbitration in textile and related industries, desires change. Prefer South. Address PW-185, Textile World, 330 W. 42nd St., New York 18, N. Y.

Available
EXECUTIVE'S ASSISTANT
Phila. Textile Institute graduate with 13 years practical experience in shaft and Jacquard fabrics. Well versed in fabric designing, layout, costing, analysis, production control and mill management. 34 years of age.
Apply PW-211, Textile World, 330 W. 42nd St., New York 18, N. Y.

AVAILABLE
RAYON WEAVING MILL MANAGER
20 years practical experience in silk and rayon weaving and throwing. Also fabric construction and analysis. Textile school graduate.
PW-1138, Textile World
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WANTED ADVERTISING—PAGE 268

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36 C & K LOOMS, 55" 4x1 automatic, 25 harness, motor driven.
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84—SPINNING FRAMES, 192-204 spindles units, 2¼" ring, 3" gauge, band driven spindles, motor driven.
9—TWISTERS, Dry, 224 spindles each, 1½" ring, 2-¾" gauge, band driven spindles, motor driven.
9—TWISTERS, Dry, 224 spindles each, 1¼" ring, 2-¾" gauge, tape driven spindles, belt driven.
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All Belt Drive from 5 H.P. Motor—66" wide

ITEM 6781
GESSNER STEAM PRESS
Jumbo Type 66" Wide

ITEM B-H
RAW STOCK DRYER—SARGENT
Apron 48" wide x 37 ft. Long—Estimated Capacity about 600± per hour—overall approx. 10 ft. wide x 45 ft. long—600± Per Hour

ITEM B-F
1 SEMI-DECATING MACHINE
Kettling & Braun-Yale—66" Cylinder Face

ITEM H-R
1—36 SPINDLE FOSTER WINDER
Model 101—Equipped with 18 Spindles for 7" Paper Tubes and 18 Spindles for Wood Tubes or Wood Cones—7" Traverse Foster Butterfly Type Slub Catchers

ITEM L-P
3—184 SPINDLE COLLINS WORSTED TWISTERS
2 5/16" Ring—4" Pitch Knee Brakes but no Traps

ITEM E
RING TRAVELERS
48 Items—Unused—In Original Packages—Detail List Furnished Upon Request

Collins & Aikman Corp.
Sales & Salvage Department
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Upland, Delaware Co., Pa.
Phone—Chester 4167

AGER, Wood, Acid
AGER, Stainless Steel Acid
AGER, Tower, New
BEAMER, 60" Van Vlaanderen
BEAMER, 60" with steaming drum
BLOWER, New, Squirrel cage type
BLOWERS, R. C. 8 x 5 3/5" 350 cu. ft. per min.
BOIL OFF TANK, 47"x72"
BUTTON BREAKER, V.V. spiral, 60"
BUTTON BREAKER, V.V. 50"
BELT, leather 3 ply 28" x ½" x 70" long
CALENDER, 3 roll 70" face
CALENDER, Kasterinsky 36" for knit goods
CLIPS, V.V. & W & J
DOUBLER, Windle, 60"
DRY CANS, set of 8, 72"x23" dia. horizontal
DRY CANS, 7 Morrison 48" high pressure
DRYING DRUM, 61" face x 24" dia.
DRYER, P&S Airlay
DRYER, P&S Loop
DRYER, Pin, Kenyon 5 tier
DYE BECKS, Stainless steel 4' to 20' New
DYE TUBS, 6' Wood complete motorized
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINES, Smith Drum Pocket type
DYEING MACHINE, Rochester Rotary 30" x 20", 3 pocket 20 lb. capacity
EXTRACTOR, 26" Amer. Motor
EXTRACTORS, Beam 50" & 60" BB
EXTRACTORS, Open top Tolhurst 40"
EXTRACTOR, K & G 48", rubber lined basket
FANS, EXHAUST 3 blade propeller 30", 36", 48"
FLAT FOLDERS, Elliott & Hall adjustable
FULLING MACHINES, L.F. Hemmer double line.
HOISTS, Budgit 1 ton ½ ton capacity
INFRA RED units complete with blowers
INSPECTION TABLES, 47"
JIGGS, monel lined 60", 50" stainless steel
KETTLE, jacketed, tilting 70 gal. cap.
MOTORS, ¾ to 5 HP AC/DC 220 volt
PAD, 3 roll Hydraulic
PAD, 2 roll 50'
PALMER 62"
PALMER QUETCH UNIT, Butterworth, 54"
PRINT MACHINE, 10" sample or ribbon
PRINT MACHINE, 6 and 8 color 60"
PUMP, Worthington Vacuum, 18x9 complete with 25 HP motor
PUMP, Nash Hytor = H5
QUETCH, 2 roll BB 50" & 60" ball bearings
SCUTCHER, NEW
SHEAR, Hermas, 4 knife 70" wide
SHELLS, Wooden 40"-42"-44"-48"
TENTER FRAME, Pin W&J 30'x220" wide
TUBERS—Paterson variable speed motors
TUBER, V.V. with doubling attachment
WARP COMPRESSOR CREEL
WASHERS, slop, New Stainless Steel
WOOL WASHERS, J. Hunter 6'

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited.

CADGENE MACHINERY CO.
5th Ave. & McLean Blvd.
P. O. Box 1206 Paterson 4 N. J.
Sherwood 2-6577

FOR SALE

BTS

5—B-C High Speed Spoolers, model KK, 140 and 180 spindles.
7—B-C High Speed Warpers with Creels 432 ends.
18 C&K 82" aut. Looms with harness, shuttles, etc.
1 Troy Laundry Cylinder Mangle 48"x120", max. steam pressure of 100 lbs.
1—#25 Foster Doubler 100 spdl. wind to wood tubes $600.
100—54¼ Section Beams 24" & 25" wood heads $4.50.
1 Hermas 4 blade Shear 58" $450.
2 Creighton Openers.

Send us list of machinery you have for sale.

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

FOR SALE

5—Barber-Colman High Speed Warpers and Creels, 432 ends per creel. Will produce 350 yards per minute.
5—C & K 1920 Model Duck Looms, Motor Driven with Motors. Will weave 62" duck varying from 7 to 30 ounces. Included are two cop winders.
60—Deliveries Saco-Lowell Drawing, 12" Coilers, Metallic Rolls, M.D. with motor.
1—Saco-Pettee Drawing Frame, 6 deliveries, leather top rolls, 12" Coilers.
2—6 x 3-½ Woonsocket Speeders, 144 spindles each. Motor driven.
1—Barber-Colman, Model "K" Portable Tying-In Machine, equipped with "B" knotter, completely rebuilt.
1—#101 Foster Winder. Double Motor driven, equipped for paper cones.
200,000—Skewers for 8 S-L Bobbins.
2—12 x 6 Whitin Slubbers, 60 spindles each, 1928 Model.
1—Cohoes Slasher, 7 & 5 foot cylinders, complete with double roll size box.
1—H & B Slasher, 7 & 5 foot cylinders, complete with double roll size box.
1—Smith Drum, 3 pocket dryer 42" x 120", Serial No. 24-358-263, 10.5 H.P., 220 Volt, with starter, switches, fittings
1—Kier 3-½ Ton, complete with motor pump, heater and pipes.
60—Deliveries H&B Drawing, 12" Coilers, Metallic Rolls, Mechanical Motion

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We own and offer for immediate delivery:

1—Set 30 Steel Cans, 120" wide, removable journal, bucket type
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1—Set 33 Steel Cans, 128" wide, removable journals, syphons
4—St. St. Jigs, 50", with rubber beams
3—St. St. Jigs, 55", with St. St. beams
2—St. St. Jigs, 44", with rubber beams
1—St. St. Jig, 60", with rubber beams
2—St. St. Lined Jig, 60", with rubber beams
1—St. St. Lined Jig, 60", St. St. beams
1—St. St. Jig, 55", with rubber beams
1—90" Single Drum Batcher
1—50" Single Drum Batcher, 1-52" Double Drum
1—48" Simpson Batcher with cut-off
1—4 Roll Chasing Calender, 42" face
1—Screw Jack for 60" Copper Rolls
1—Lot about 790 W.&J. Clips, side opening, St. St.
1—2 Burner Gas Singer, 46"
3—Reeves Drives—2-#3 Roller Bearings, 1-#2 Plain
2—80" Jigs, St. St. Box, St. St. Beams
1—90" Padder 1-Brass—1-Rubber Roll

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Textile Machinery of Quality

FOR IMMEDIATE DELIVERY!!

Large Package Rayon Twisters

7 FLETCHER MOTORIZED 1934 MODEL **6"** GAUGE SINGLE DECK TWISTERS

8—80 spindle machines and 5—82 spindle with 6⅛" centers, 3½" wide cork covered take-up pulleys. 4½" diameter motor pulleys, 3 HP General Electric motors with starting switches. 220 volts, 60 cycles. Machines in excellent condition.

EXCELLENT BOBBIN EQUIPMENT AVAILABLE FOR THESE MACHINES AT LOW COST.

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3,600 — 3"	Bakelite Head	5-B	7" Trav.
37,000 — 2¾"	Bakelite Head	5-B Spinner	4½" Trav.
25,000 — 2¾"	Fiber Head	5-B Spinner	4½" Trav.
39,000 — 3"	Bakelite Head	Steaming or Winding	3⅝" Trav.
12,000 — 3½"	Fiber Head	Winding	4¾" Trav.
400,000 — 2½"	Fiber Head	Winding	3½" Trav.
250,000 — 3"	Metal Head	Winding	3⅝" Trav.
100,000 — 2¼"	Fiber Head	Winding	3⅜" Trav.

5,500 New Wire Reels, 9" Head, 7¾" Trav., 3" Bar

MANY MORE TOO NUMEROUS TO LIST. SEND US YOUR SPECIFICATIONS!

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1—60" Fletcher—Motorized
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1—36" Schaum & Uhlinger--Motorized

4 WHITIN
2 SCHUBERT & SELZER
TRICOT MACHINES

168" Machines. All Individually Motorized. 28 Gauge—2 Bar Type. Can be used for Rayon, Cotton, Silk and Nylon.

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Below Market Price

75,000 Lbs. ⅜" .020 Signode. Original Paper Wrapped Coils. All or Part Quantity.

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20 Spindles Each—Individually motorized—Flat Quill Attachments. Bunch Builders Set Up for Wool and Cotton.

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Automatic Boarding Drying and Stripping Machine For Hosiery. Serial #156. Made by Philadelphia Textile Machinery Co.

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Motorized Six Spindles. 2-3-30 Cone Taper, 2-5-57. Anti-Wear Tensions. Belt Gainers. In Good Condition.

22—C. & K LOOMS 56" 4 x 1 60X, Gem Head Set Up for Motor Drive 1927 Model

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24,000 Lbs. 50/1C. P. Nat on Cones 27-28 Turns
1000 Lbs. 75 Den. Bemburg, Cones Thrown to 3 Turns
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1—Schofield Rag Picker, cyl. 18" x 30"
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8—Halton 2600 hook Jacquards
2—Spencer Automatic Oilers
1—L. & G. 32 sp. Cop Winder from skeins
4—Foster Mod. 12 Coners from skeins
3—Foster Mod. 101 Coners, Motor Driven
Universal No. 50 and 90 Winders—Rebuilt
1—Universal No. 180 Superconer
2—Altemus 6" Drum Spoolers
2—Universal 6C Heads
6—C. & K. 82", 4x4 box, Mtr. Dr. Cash. Looms
2—Altemus Long Chain Beamers
2—Altemus Warpers, Pinless
1—P. & W. 66" Measuring, Rolling & Doubling Machine
1—Windle 72" Fold. & Meas. Machines
1—Gessner 18 roll, 80" D.A. Napper
1—McCreary 10 roll Knit Goods Napper
1—Smith-Drum Mercerizing Range, 24 Arms
1—K. & B. Full Decater, 72"
2—Royal 600 hook Card Cutters
1—L & G Chenille Cutter
1—S.F. Yarn Sizer & Dry Cans
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1—Seargent Stock Dryer
1—Gessner 66" Jumbo Cloth Press
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1—Fletcher 60" Underneath Motor Driven extractor
1—Trojan 48" Direct Motor Driven Extractor
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Looms for Cotton and Rayon
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38—C&K 52" Box looms—2x1—16 Dobby individual motor driven ½ HP motor electric warp stop motions and temples fully equipped in excellent running order
9—C&K Silk & Rayon 4x4 Looms 52" reed space 20 harness dobby—motor driven
14—C&K 4x1 Looms—Roller bearing 25 harness dobby, motor driven
14—Draper 80" reed space Automatic loom 28 Battery Cam motion Modified D Individual motor driven ¾ HP motors Mechanical warp stop motions completely equipped
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20—Attwood 5B Twisters 2½ in. rings 100 spindle Individual motor driven

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1—40' x 60" V. V. Tenter Frame complete with S. S. plate clips
1—30' x 72" W & J Tenter Frame complete
1—66" face x 48" dia. two can Cotton Back Filling Machine
1—50" 2 roll ball bearing Quetch
1—50" 3 roll V. V. Quetch
1—50" 3 roll V. V. Print Padder
2—50" Werner Dye Jiggs S. S. lined
2—56" Morrison enclosed gear copper lined Dye Jiggs
2—54" General enclosed gear S. S. lined Dye Jiggs
1—set of 9—20" x 60" Heavy Steel Dry Cans
1—steam driven Suction Machine
1—50" V. V. Button Breaker
1—36" motor driven self balancing Hercules Extractor
2—50" x 72" motor driven Beamers
3—60" motor driven Tubing & Measuring Machines
1—54" Inspecting & Measuring Machine tube to tube
50 - 80 - 100 gallon S. S. Steam Jacketed Kettles
2—motor driven 84 spindle Fletcher Duplex Machines
2—No. 50 Universal Coners
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About 5,000 S. S. high speed V. V. Clips
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Two five hundred pound Obermeier Package Dyeing Machines, complete with auxiliary equipment which consists of 1 Extractor, four Dryers and 1000 gallon Hot Water Supply Tank.

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4—#2 Motor Driven, 860 RPM, 240 CFM, at 10" Mercury Vacuum
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Misc. Supply Division
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We can offer for immediate delivery the following surplus throwing equipment of the Chipman Spinning Mills, Inc., Easton, Penna.

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10 ATWOOD MOTORIZED DOUBLE DECK TWISTERS

200 spindles each machine. 4¼" spindle spacing. 3" cork takeup rolls. 5 h.p. motor for each machine. 5,000 stainless steel take-up shafts which were used on these machines. 3¼" traverse, 3" heads. Mushroom gudgeons.

5—88 SPINDLE ATWOOD MODEL 5B DOUBLE TWISTERS

5" spindle spacing. Swing spindles. 3½" Eadie rings, single 2" feed rolls, 6" trav., Each machine motorized with a 3 h.p. motor. Bakelite 5B spinner spools available which were used on these machines.

7—80 SPINDLE ATWOOD MODEL 5B DOUBLE TWISTERS

5" spindle spacing. Swing spindles. 3½" Eadie rings, single 2" feed rolls, 6" trav., Each machine motorized with a 3 h.p. motor. Bakelite 5B spinner spools available which were used on these machines.

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80 MODEL #50 UNIVERSAL CONE WINDERS

32 are equipped with pineapple roller type attachments. All the above mentioned coners are equipped with 3 30 cone holders Anti-wear tensions, belt gainers. Each machine 6 spindles and one late one h.p. motor for each two machines.

CAMS FOR #50 UNIVERSAL WINDERS. 150 5" cams; and 650 6" cams.

The above throwing equipment is still on the mill floor. Inspection is invited at your convenience. All items are offered subject to prior sale. Further details given upon request.

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1—#3 Reeves Drive, Class A

Several Blowers and Exhaust Fans

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Any Make or Model. Must Be in Good Working Condition.

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4 or more Reading Hosiery Examining Forms, air-expanding, with tables, counters, and racks, if available.

W-283, Textile World
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WANTED

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Scott tester, Model J preferred. Give full details including accessories and price.

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Anything you want

that other readers of this paper can supply

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2—Saco Lowell Bale Breakers
2—Saco Lowell 40" Single Process Pickers
3—Saco Lowell 40" Breaker Pickers, 1917
4—Saco Lowell 40" Finisher Pickers, 1917
1—Kitson W3—2 Section Waste Machine, 1912
1—Kitson W3—3 Section Waste Machine, 1912

LOOMS

208—C & K 4x1 Box Automatic Looms, 95" Between Swords, with 600 Hook Jacquard Heads, 89" Sand Rolls, Pick Counters, Center Filling Forks, 4 Cell Bobbin Magazines for 8¾" Bobbins, 1913 to 1927
48—C & K 4x1 Box Automatic Looms, 43½" between Swords, with 20 Harness Dobby Heads, 39½" Sand Rolls, Box Chain Attachments and Multipliers, High Roll Take Up, Friction Let Off, Pick Counters, 4 Cell Bobbin Magazines for 8¾" Bobbins, Roller Top Arrangement on Double Arches for Plain work with cams, 1923
1—Royle Piano Card Cutter
3—Terrell Utsman Double Head Bobbin Strippers, One Motor Driven, 1929

SLASHERS

1—Lowell 2 Cylinder Slasher, 4' and 6' Cylinders, Gear Driven, 56" Headway
2—Lowell Hot Air Slashers, 4 Sections, 8 Coils, 95" Headway
2—Saco Lowell and Lowell Size Kettles
1—Saco Lowell Slasher Size Box

CARDS

2—Saco Lowell 40" Cards, 12" Coilers, 1927
25—Saco-Pettee 40" Cards, 12" Coilers, 1910 and 1911
11—H & B 40" Cards, 12" Coilers, 1910
31—Lowell 40" Cards, 12" Coilers, 1904
All above cards are equipped with Abington Stripping attachments and recently reclothed.

DYEING AND FINISHING

1—Klauder Weldon Raw Stock Dyeing Machine, 1000 Lbs. Capacity, with Stainless Steel Lined Tank and Stainless Steel Perforated Sheet, 1929
2—Delahanty Raw Stock Dyeing Machines, 1000 Lbs. Capacity Each
2—Proctor & Schwartz Raw Stock Dryers, 11 Sections, 11 Fans, Metal Housing, 66'x7'x10' with Automatic Pit Feeders and 52" Press Roll Units, Capacity 1125 Lbs. per hour each, 1929
1—Lattis Conveyor Apron Connected to the above dryers at the Delivery end, 1929
1—Kitson Automatic Feeder with Apron 16'x36", connected to a Saco Lowell Vertical Opener, and connected to the delivery end of the above dryers
1—Tolhurst Extractor, 48" Copper Basket

SPINNING, SPOOLING AND WARPING

56—Saco Lowell Spinning Frames, 240 Spindles Each, Tape Drive, 2¾" Gauge, Centrifugal Clutch Spindles for 8¾" Bobbins, Case Hardened Front Rolls, 1923
1—Saco Lowell Twister, Tape Drive, 216 Spindles, 3" Gauge, Motor Driven by 550 Volt Motor
3—#90 Universal Winders
1—#50 Universal Winder
3—Saco-Pettee and Easton & Burnham Spoolers, 144 and 88 Spindles Each
9—Draper Warpers, 54"

NAPPERS

11—Woonsocket Double Acting Nappers, 80", 36 Roll
2—Woonsocket Double Acting Nappers, 86", 18 Roll
3—Woonsocket Double Acting Nappers, 90", 36 Roll
3—Montforts Double Acting Nappers, 80", 36 Roll
15—Sturtevant #4 Monogram Blowers
5—Sturtevant #5 Monogram Blowers
1—Dronsfield Napper Grinder

DRAWING FRAMES

9—Saco Lowell Drawing Frames, 4 Dels Each, 10" Coilers, 1922
2—Saco-Pettee Drawing Frames, 4 Dels Each, 10" Coilers, 1913
6—Saco-Pettee Drawing Frames, 6 Dels Each, 10" Coilers, 1910
Metallic Top Rolls on all of above drawing.

ROVING FRAMES

6—Saco Lowell Slubbers, 12x6, 60 Spindles Each, 1922
2—Saco Lowell Slubbers, 12x6, 60 Spindles Each, 1917
2—Saco-Pettee Slubbers, 12x6, 60 Spindles Each, 1910
2—Saco-Pettee Intermediates, 10x5, 76 Spindles Each, 1912
6—Woonsocket Speeders, 8x4, 128 Spindles Each
4—Providence Speeders, 8x4, 128 Spindles Each

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Assortment of General Electric Motors, 3 Phase, 60 Cycle, 550 Volts, from 20 to 75 HP with Bases and Starters

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500—12" Seamless Roving Cans
1500—10" Seamless Roving Cans
60,000—NEW 8¾" three ring Draper Bobbins
20,000—8¾" three ring Draper Filling Bobbins, Used Once
2,000,000—8¾" three ring Draper Filling Bobbins, Used
100,000—8" Warp Bobbins
40,000—12" Saco Lowell Roving Bobbins
25,000—10" Saco Lowell Roving Bobbins
70,000—8" Woonsocket Roving Bobbins
1,000—Fibre Filling Baskets
300—4 Wheel Roving Box Trucks
55—Raw Stock Barrow Trucks

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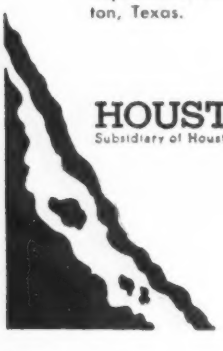

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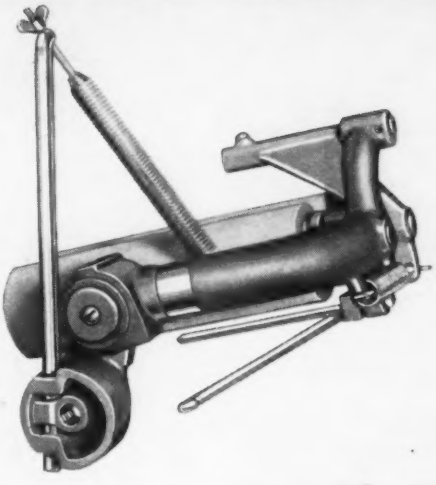

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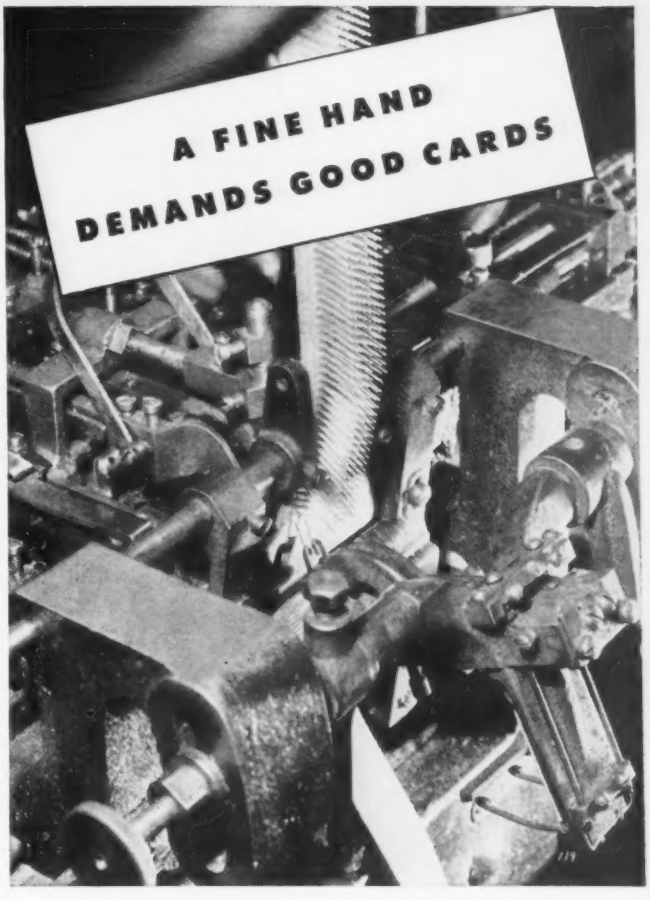

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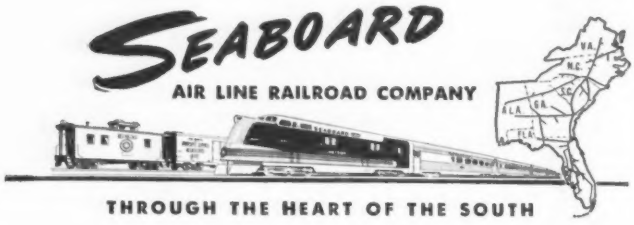

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